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Result
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Database :
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Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Minimum DB seq length: 0
Maximum DB seq length: 2000000000
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Title:
Perfect score:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Searched:
                                                                                                                                                                                                                                                             and is
                                                                                                                                                                                                                                                                                          Pred. No.
                                                                                                                                                                                  Score
                                                                                                                                                                                                                                                          No. is the number of results predicted by chance to have a greater than or equal to the score of the result being printed, s derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     protein search, using sw model
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Match
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Gapop 10.0 , Gapext 0.5
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92
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       390729 seqs, 57163235 residues
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                                                                                                                                                                                                                                                                                                                                                                                         /SIDS6/gcgdata/geneseq/geneseqp/AA198.DAT:*
/SIDS6/gcgdata/geneseq/geneseqp/AA198.DAT:*
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /SIDS6/gcgdata/geneseq/geneseqp/AA1980.DAT:*
/SIDS6/gcgdata/geneseq/geneseqp/AA1981.DAT:*
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                                                                                                                                                                                    Length
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   R12973
R83639
R821929
W0113022
W56114
Y04481
Y04481
Y78574
W46044
W13025
                                                                                                                                                                                                                              SUMMARIES
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IV-H1 based on typ Collagen IV alpha-Non-RGD, non-YISGR Peptide 10 for gli Collagen alphal(IV Peptide representi Human type IV collagen dollagen alphal(IV Peptide intermedia
                                                                                                                                                                               Description
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R12973
ID R1
XX R1
AC R1
XX IV
DT 24
XX IV
DE IV
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OS Sy
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            malignant cell growth; melanoma cell motility; cellular adhesion.
                                                                                                                                                                                                                                                                                                                                                                                                              24-SEP-1991
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                      R12973 standard; peptide; 15
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22	22	21	21	18	18	21	21	21	19	17	19	22	21	22	21	21	21	20	20	20	21	20	16	13	21	16	19	21	18	13	21	18	19
в49600	В49594	.в43063	в30234	W13673	W18781	Y64662	G00125	B43060	W40115	W03561	W39749	в27230	Y91666	B49596	Y91522	Y44488	Y66642	Y08694	W92296	W92297	Y56783	Y44171	R79163	R28916	Y96125	R71704	W40114	B58180	W09643	R23873	B58169	W13024	W46043
Clq C prote	O	N	Human complement c	Recombinant bovine	binant bovin	5' EST re	Human secreted pro	Human ORFX ORF2824	Human alpha-5(IV)	phage red	marcosR	EXMAD-8 S	Human secreted pro	zacrp6.	ם ק	-	ane-bound	collagen		lpha-1	alpha3	_	al s	e III	lagen type I	qen alp	n alpha-1(IV)	cancer as	type IV	alpha	g canc	lagen alphal(Collagen sequence

ALIGNMENTS

(first entry)

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	PD	27-JUN-1991.	
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·.		06-DEC-1990;	90WO-US07162.
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•	PR	14-DEC-1989;	14-DEC-1989; 89US-0450419.
•		(MINU) MINNES	(MINU) MINNESOTA UNIVERSITY.
		Chelberg MK,	Chelberg MK, Tsilibary PE, McCarthy JB;
GR			
		WPI; 1991-207864/28.	864/28.
_			
		Polypeptide fo	or promoting tumour cell adhesion, spreading an
		notility - use	motility - useful in chemo:diagnosis and chemotherapy of
;	PT 1	malignant cell growth	l growth
·	PS	Claim 1; Page	Claim 1; Page 26; 37pp; English.
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RESULT
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Best Local
                                                                                                                                                                                                    A polypeptide which includes at least five amino acids from a fragment of the fibronectin A chain (R83679-84), C-terminal G domain of the laminin A chain (R83642/78) or NCI domain of the alpha-2 chain of type IV collagen (R83639-41) suppresses fibroblast, epithelial and glial cell proliferation, contraction of epiretinal membranes and cell migration within the eye. It may be used in the treatment of proliferative vitreoretinopathy,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      This polypeptide (designated IV-H1) corresponds to type IV collagen residues 1263-1277 from the major triple helical region of the alpha 1 chain type of IV collagen. It, or a polypeptide comprising this sequence, can be used to promote cellular attachment to substrata or to inhibit the metastasis and invasion of tumour cells.
                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                       Example 1; Page 29; 84pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           glaucoma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Treating
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Wright
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Agarwal A,
Wright MM,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Collagen; type IV; alpha-2 chain; NC1 domain; fibroblast; cell; prollferation; suppression; epithelial; glial; epiretinal; eye; membranes; contraction; migration; vitreoretinopathy; scarring;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Collagen IV alpha-2 chain NC1 domain peptide IV-H1 (1263-1277).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        11-APR-1996
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                                                                                                                                                                                    vitreoretinal scarring
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28-FEB-1994;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  proliferative vitreo:retinopathy, retinal scarring
- using peptide derived from fibronectin, laminin or
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     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Balles M, Furcht LT, Skubitz AP;
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94US-0203458
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                        100.0%;
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Score 92; DB 16;
Pred. No. 2.6e-07;
); Mismatches 0;
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Pred. No. 2.6e-07;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gregerson
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e eye. It
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RESULT
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R82922
ID R8
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Best Local S
Matches 15
                                                                                                                                                                                                                                                                                                                                                                              The peptides R70472-90 and R82907-24 are peptide derivatives which inhibit cancer metastasis. They are composed of an adhesive peptide with a core sequence selected from: RGD (R70472-85), YIGSR (R70486-90) or other sequence (R82907-24), linked to a water soluble polysaccharide, preferably a water soluble dextran, at the C-terminus. The peptides are useful in inhibiting cancer metastasis, healing wounds and the regulation
                                                  glia cell; neuron; analysis; behaviour; selective; removal
                                                                          Peptide 10
                                                                                                     18-DEC-1996
                                                                                                                               W01139;
                                                                                                                                                        W01139 standard;
                                                                                                                                                                                                                                                                                                                                           Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Disclosure; Page 3; 6pp; Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Cancer metastasis inhibitive peptide derivs. - useful for of cancer metastasis, healing of wounds and regulation of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Cancer metastasis; adhesive peptide; core sequence; water soluble polysaccharide; metastasis; wound; im
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               R82922;
                                                                                                                                                                                                                                                                                                                                                                    of immunogenicity.
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                                      fibronectin;
                                                                                                                                                                                                                                                                                                                                           15 AA;
                                                                          for glia cell removal derived
                                                                                                                                                                                                                                                                             Conservative
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                                                                                                    (first entry)
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                                                                                                                                                      peptide; 15 AA
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                                      collagen.
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                                                                                                                                                                                                                                                                           Score 92; DB 16;
Pred. No. 2.6e-07;
; Mismatches 0;
                                                                             from
                                                                             collagen
                                                                                                                                                                                                                                                                                                    Length 15;
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                                                                                                                                                                                                                                                                                                                                                                            RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local
                                                                                                                                                                                                                                           Collagen; cell; adhesion; migration; promotion; alpha1(IV) chain; triple helical polypeptide; solid phase synthesis; study; O-glycosidic bond; deuterium label; structure; biological activity.
Solid phase synthesis of triple-helical branched polypeptide under O-glycosidic bond and deuterium label retaining conditiwhich may contain collagen cell adhesion sequences, useful fostudying structure and biological activity of collagen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             W01135-40 are peptides, derived from laminin, fibronectin and collagen, which selectively remove glia cells in the presence of neurons. This enables analysis of behaviour of neurons in the absence of glia cells.
                                                                                                                                                                                                                                                                                                                                 W13022;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Selective remover for glia cells from neuronal cell cultures - useful for studying behaviour of neurons in the absence of glia
                                                       WPI; 1997-011309/01
                                                                             Fields
                                                                                                                      30-JUN-1993;
27-SEP-1995;
                                                                                                                                                                                                   US5576419-A
                                                                                                                                                                                                                                                                                       Collagen alpha1(IV)
                                                                                                                                                                                                                                                                                                             30-APR-1997
                                                                                                                                                                                                                                                                                                                                                      W13022 standard; peptide; 15 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 1996-205531/21.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       31-AUG-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           31-AUG-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JP08073495-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Key
                                                                                                  (MINU ) UNIV
                                                                                                                                                        30-JUN-1993;
                                                                                                                                                                             19-NOV-1996
                                                                                                                                                                                                                       Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Example 1; Page 4; 6pp; Japanese
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (AGEN ) AGENCY OF IND SCI & TECHNOLOGY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  19-MAR-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local
                                                                                                                                                                                                                                                                                                                                                                             G
                                                                                                                                                                                                                                                                                                                                                                                                                       GVKGDKGNPGWPGAP 15
                                                                                                                                                                                                                                                                                                                                                                                                            gvkgdkgnpgwpgap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             15 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                            (first entry)
                                                                                                   MINNESOTA
                                                                                                                      93US-0085633.
95US-0534342.
                                                                                                                                                       9308-0085633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      94JP-0232263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          94JP-0232263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note= "Pro-NH2"
                                                                                                                                                                                                                                                                                       chain residues 1263-1277
                                                                                                                                                                                                                                                                                                                                                                                                                                                               100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 92;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 17;
2.6e-07;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                     conditions,
             for
                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
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RESULT
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Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                      sequence. This sequence is used to construct a peptide-amphiphile complex to exemplify the invention. The peptide-amphiphile complex of the specification comprises a lipophilic portion and a peptide portion having a secondary structure. The peptide portion preferably has biological activity, e.g. cell recognition activity or enzymatic activity. The complex may be used for forming stable lipid films on substrates, or may be used in bilayer membrane systems. It may, in micellar or vesicular form, be used in preparation of drug-targeting
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The present peptide is a collagen cell adhesion sequence (CCAS), known to promote adhesion and migration of various cells, comprising residues 1263-1277 of the collagen alphal(IV) chain. The triple helical polypeptide 2 (THP-2), which includes the present CCAS (residues 25-39) in its triple helix inducing region, was prepared by solid phase synthesis under O-glycosidic bond and deuterium label retaining conditions. THP-2 can be used to study the structure and biological activity of collagen.
                                                                                                                                                                                               Claim 15;
                                                                                                                                                                                                                                          Peptide-amphiphile complexes which are able to form micelles or vesicles - comprise a lipophilic portion and a peptide portion or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Alpha-1(IV)1263-1277 collagen sequence; peptide-amphiphile complex; lipophilic portion; stable lipid film; bilayer membrane system;
                            systems against melanoma cells.
                                                                                                                                                                 The present sequence represents the alpha-1(IV)1263-1277 collagen
                                                                                                                                                                                                                                                                                                                      Fields GB,
                                                                                                                                                                                                                                                                                                                                                                                   23-AUG-1996;
                                                                                                                                                                                                                                                                                                                                                                                                               27-AUG-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                             26-FEB-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            W09807752-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      drug-targeting; melanoma cell.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              09-JUL-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             W56114;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        W56114 standard; peptide; 15 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim
                                                                                                                                                                                                                                                                                                                                                   (MINU ) UNIV MINNESOTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 GVKGDKGNPGWPGAP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                18;
                                                                                                                                                                                                                              secondary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               representing
                                                                                                                                                                                               Page 23; 33pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Column 25; 25pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        15 AA;
                                                                                                                                                                                                                                                                                                                     Tirrell MV.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                   96US-0702254.
                                                                                                                                                                                                                                                                                                                                                                                                               96WO-US14145
                                                                                                                                                                                                                              structure
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               the alpha-1(IV)1263-1277 collagen sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 92;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 18;
2.6e-07;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length
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                                                                                                                                                                                                                                          portion which
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Sequence

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RESULT
Y78574
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Y04481
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                                                                                        Query Match
Best Local Similarity
Matches 15; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
Matches 15; Conserv
                                                                                                                                                                     The present sequence represents an all D-form fragment of the continuous collagenous region of the major triple helical domain of the alpha 1 chain of human type IV collagen, designated D-IVHI. The peptide D-IVHI can be used to inhibit tumour cell binding to type IV collagen, inhibit tumour cell invasion of basement membrane and inhibit tumour cell metastasis in vivo. The peptide can be used to treat melanoma cell metastasis, and spontaneous Lewis lung tumour metastasis. The peptide is also useful for targeting cytotoxic agents and drugs to tumour cells.
                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                            Claim 4; Page 18; 31pp; English.
                                                                                                                                                                                                                                                                                                     New polypeptide useful for inhibition of tumour cell adhesion to IV collagen
                                                                                                                                                                                                                                                                                                                                        WPI; 1999-302644/25
                                                                                                                                                                                                                                                                                                                                                             Fields GB, McCarthy JB
                                                                                                                                                                                                                                                                                                                                                                                                                                             22-OCT-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    29-APR-1999.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO9920300-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Key
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human; type IV
cell adhesion;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human type IV collagen alpha 1 chain D form fragment D-IVH1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           05-JUL-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Y04481;
                                                                                                                                                                                                                                                                                                                                                                                    (MINU ) UNIV MINNESOTA.
                                                                                                                                                                                                                                                                                                                                                                                                           22-OCT-1997;
22-OCT-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Y04481 standard; peptide; 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               <u>~</u>
                                        1 gvkgdkgnpgwpgap
                                                       1 GVKGDKGNPGWPGAP 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GVKGDKGNPGWPGAP 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gvkgdkgnpgwpgap
                                                                                                                                                   15 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            100.
ilarity 100.
Conservative
                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              collagen alpha 1 chain; D-IVH1; inhibition; tumour; major triple helical domain; collagenous region.
                                                                                                                                                                                                                                                                                                                                                                                                          97US-0062716.
97US-0062617.
                                                                                                                                                                                                                                                                                                                                                                                                                                             98WO-US22405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note-
                                                                                                   100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                D-form residues"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0.0%;
                                                                                          0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ä
                                                                                                     Score 92; DB 20;
Pred. No. 2.6e-07;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 92; DB 19;
Pred. No. 2.6e-07;
; Mismatches 0;
                                                                                        Mismatches
                                                                                          0
                                                                                                               Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 15;
                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                 15;
                                                                                        0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0,
                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                tуре
                                                                                          0;
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/label= 4Hyp

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RESULT
W46044
ID W4
В
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PR
XX
PA
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Matches 15; Conserv
                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                         This sequence represents a type IV collagen peptide. Ocular administration of the peptide inhibits fibroblast proliferation and can be used in the treatment of glaucoma. The peptide can be used to treat proliferative vitreorethnopathy by ocular administration of the peptides of the invention, which suppress fibroblast-mediated collagen gel contraction. The peptides can used for treating glaucoma in mammals, especially humans, by inhibiting intraocular fibroblast proliferation, fibroblast migration and scarring.
                                                                Synthetic
                                                                                     Triple helix;
                                                                                                          Collagen sequence synthesised as triple-helical peptide
                                                                                                                                  23-DEC-1998
                                                                                                                                                        W46044;
                                                                                                                                                                            W46044 standard;
                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Treatment of glaucoma by ocular administration of a peptide that inhibits fibroblast proliferation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gregerson DS, Agarwal A, Furcht LT, Balles M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Unidentified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Type IV collagen; proliferative ret:
         Modified-site
                             Key
Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 2000-159882/14.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 28-FEB-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       27-FEB-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11-JAN-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US6013628-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Type
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Y78574 standard; peptide; 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (MINU ) UNIV MINNESOTA
                                                                                                                                                                                                                                   1
                                                                                                                                                                                                                                              1 GVKGDKGNPGWPGAP
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                                                                                                                                                                                                                                   gvkgdkgnpgwpgap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              IV collagen derived peptide IV-HI
                                                                                                                                                                                                                                                                                                                                      15
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Column
                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                  (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                     collagen structure;
                                                                                                                                                                                                                                                                                                                                       ĀΑ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gen; intraocular fibroblast proliferation inhibitor;
retinopathy; fibroblast migration; scarring; glaucoma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 94US-0203458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       95US-0394748
                                         Location/Qualifiers
                                                                                                                                                                            peptide;
                   /label= 4Hyp
                                                                                                                                                                                                                                                                                                                                                                                                                                                               15;
                                                                                                                                                                                                                                                                                          100.0%;
                                                                                                                                                                                                                                                        15
                                                                                                                                                                              24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Wright MM,
                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             English.
                                                                                                                                                                              AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ₿
                                                                                                                                                                                                                                                                                         Score 92; DB 21;
Pred. No. 2.6e-07;
                                                                                                                                                                                                                                                                                Mismatches
                                                                                      homo-trimer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Murali S,
                                                                                      hetero-trimer
                                                                                                                                                                                                                                                                                                     Length 15;
                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Skubitz APN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              type IV collagen
                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                Gaps
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В
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Best Local S
Matches 15
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27-SEP-1995;
03-JUL-1996;
                                                                                                                                                                                                                                                                                                                                                                                                          The invention relates to supported polypeptides of formula:
A-B-B-(J)j-(U)u-L-R; where A = an N alpha-amino protecting group
removable under non-acidic conditions; B = an amino acid having a single
side-chain amino group protected with a group removable under non-strong
acidic conditions; J = an amino acid that is capable of acting as a
chromophore and is protected with a group capable of withstanding the
conditions under which the protecting groups of A and B are removed; U =
an amino acid; u = 0 or 1; j = 1 or more; L = a linker capable of being
labilised using a non-strong acid mechanism, and R = a support material.
The supported polypeptides are intermediates for triple-helical
polypeptides. The triple-helical polypeptides are useful for studying the
structure and biological activity of specific collagen sequences in homo-
                                                                                    Triple helical polypeptide; collagen; cell; adhesion; migration; promotion; alphal(IV) chain; solid phase synthesis; study; O-glycosidic bond; deuterium label; structure; biological activity; homotrimeric; heterotrimeric; nuclear magnetic resonance; NMR.
                                                                                                                                           Collagen alphal(IV) chain containing triple helical polypeptide 4.
                                                                                                                                                                 30-APR-1997
                                                                                                                                                                                        W13025
                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Supported polypeptide(s) useful as intermediates - for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 1998-192815/17.
          Modified-site
                                                                 Synthetic
                                                                                                                                                                                                           W13025 standard; peptide; 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   triple-helical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (MINU ) UNIV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Modified-site
                               Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  03-JUL-1996;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US5726243-A
                                                                                                                                                                                                                                                                    10
                                                                                                                                                                                                                                   10
                                                                                                                                                                                                                                                                                       1 GVKGDKGNPGWPGAP 15
                                                                                                                                                                                                                                                                                                                                                                                          hetero-trimeric forms. The present sequence represents a collagen uence used in the synthesis of triple-helical peptides.
                                                                                                                                                                                                                                                                 gvkgdkgnpgwpgap
                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                     24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Column 3;
                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MINNESOTA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   polypeptide(s) having collagen structures
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                93US-0085633.
95US-0534342.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     96US-0675140
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∕label- 4Hyp
          σ
/label- Hyp
                    /label- Hyp
                                          Location/Qualifiers
                                                                                                                                                                                                                                                                                                                       100.0%;
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Pred. No.
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W46046
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Best Local Similarity 100
Matches 15; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The present sequence is that of triple helical polypeptide 4 (THP-4), which includes a collagen cell adhesion sequence, known to promote adhesion and migration of various cells (residues 1263-1277 of the collagen alphal(IV) chain), in its triple helix inducing region. THP-4 was prepared by solid phase synthesis under 0-glycosidic bond and deuterium label retaining conditions, without strong acidolysis steps which affect 0-glycosylation and isotopic labelling. THP can be used to study the structure and biological activity of particular collagens as homotrimeric or heterotrimeric forms, with the advantage that different adhesion sequences can be studied with a minimum of Gly-Pro-Hyp triplets, avoiding
                                                                                   W46046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Solid phase synthesis of triple-helical branched polypeptide - under O-glycosidic bond and deuterium label retaining conditions, which may contain collagen cell adhesion sequences, useful for studying structure and biological activity of collagen
Peptide intermediate used in synthesis of triple-helical peptide
                                         23-DEC-1998
                                                                                                                        W46046 standard; peptide; 39 AA.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                  overlapping NMR resonances.
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27-SEP-1995;
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4.8e-07;
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Triple helix; collagen structure; homo-trimer; hetero-trimer

Synthetic

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                       Query Match
Best Local Similarity
""" ches 15; Conserve
                                                                                               30-JUN-1993;
27-SEP-1995;
03-JUL-1996;
                                                                                                                 The invention relates to supported polypeptides of formula: A-B-B-(J); (U)u-L-R; where A = an N alpha-amino protecting group removable under non-acidic conditions; B = an amino acid having a single side-chain amino group protected with a group removable under non-strong acidic conditions; J = an amino acid that is capable of acting as a chromophore and is protected with a group capable of withstanding the conditions under which the protecting groups of A and B are removed; U = an amino acid; u = 0 or 1; J = 1 or more; L = a linker capable of being labilised using a non-strong acid mechanism, and R = a support material. The supported polypeptides are intermediates for triple-helical polypeptides. The triple-helical polypeptides are useful for studying the structure and biological activity of specific collagen sequences in homoand hetero-trimeric forms. The present sequence represents a peptide intermediate used in the synthesis of a triple-helical peptide.
                                                                                              Sequence
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                                                                                                                                                                                                                                                                                                                        Supported polypeptide(s) useful as intermediates - for triple-helical polypeptide(s) having collagen structures
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                                               Score 92; DB 19;
Pred. No. 7.1e-07;
                                    Mismatches
                                                         Length 39;
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RESULT 12
W46043
ID W46043
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                                  The invention relates to supported polypeptides of formula:

CC A-B-B-(J)j-(U)u-L-R; where A = an N alpha-amino protecting group cremovable under non-acidic conditions; B = an amino acid having a single side-chain amino group protected with a group removable under non-strong caidic conditions; J = an amino acid that is capable of acting as a chromophore and is protected with a group capable of withstanding the conditions under which the protecting groups of A and B are removed; U = an amino acid; u = 0 or 1; j = 1 or more; L = a linker capable of being labilised using a non-strong acid mechanism, and R = a support material. The supported polypeptides are intermediates for triple-helical polypeptides. The triple-helical polypeptides are useful for studying the structure and biological activity of specific collagen sequences in homocam of the support of the supported polypentides are useful for studying the structure and biological activity of specific collagen sequences in homocam of the supported polypentides are useful for studying the structure and biological activity of specific collagen sequences in homocam of the supported polypentides are useful for studying the structure and biological activity of specific collagen sequences are useful for studying the structure and biological activity of specific collagen sequences are useful for studying the structure and biological activity of specific collagen sequences are useful for studying the structure and biological activity of specific collagen sequences are useful for studying the structure and biological activity of specific collagen sequences are useful for studying the structure and biological activity of specific collagen sequences are useful for studying the structure and biological activity of specific collagen sequences are useful for studying the structure and biological activity of specific collagen sequences are useful for studying the structure and support and structure and support and support and support and support and support and support and sup
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27-SEP-1995;
03-JUL-1996;
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Solld phase synthesis of triple-helical branched polypeptide - under O-glycosidic bond and deuterium label retaining conditions.
                          WPI; 1997-011309/01
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27-SEP-1995;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                          Collagen alphal(IV) chain containing triple helical polypeptide
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95US-0534342
                                                                                                   93US-0085633
                                                                                                                                                                                                     40
/note=
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                                                                                                                                                                                                                              25..39
/note=
                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                     /note-
                                                                                                                                                                                                                                                               /label-
                                                                                                                                                                                                                                                                                                                                /label-
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                                                                                                                                                                                                                                                                               label-
                                                                                                                                                                                                                                                                                                                'label-
                                                                                                                                                                                                                                                                                                                                                 /label-
                                                                                                                                                                                                                                                                                                                                                               label- Hyp
                                                                                                                                                                                                                                                                                               label-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             100.08;
                                                                                                                                                  "linked via
comprising
sequence"
                                                                                                                                                                                    "linked via
comprising
sequence"
                                                                                                                                                                                                                      "collagen alphal(IV) chain residues 1263-1277"
                                                                                                                                                                                                                                                                                               Нур
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 92;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                          peptide bond to Pro39 of residues 1-39 of present
                                                                                                                                                                                             residues 1-39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7.1e-07;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       19;
                                                                                                                                                                                           1 to Pro39 of
39 of present
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 39;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                         activity;
                                                                                                                                                                   peptide
                                                                                                                                                                                                     peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
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RESULT
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Best Local S
Matches 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The present sequence is that of triple helical polypeptide 2 (THP-2), which includes a collagen cell adhesion sequence, known to promote adhesion and migration of various cells (residues 1263-1277 of the collagen alphal(IV) chain), in its triple helix inducing region. THP-2 was prepared by solid phase synthesis under 0-glycosidic bond and deuterium label retaining conditions, without strong acidolysis steps which affect 0-glycosylation and isotopic labeling. THP can be used to study the structure and biological activity of particular collagens as homotrimeric or heterotrimeric forms, with the advantage that different adhesion sequences can be studied with a minimum of Gly-Pro-Hyp triplets, avoiding
                                                                                                                                                                                                                                                                                                                                                                                                                                               Human; lung cancer associated protein; neuroprotective; cytostatic; cardioactive; immunomodulatory; muscular active; vulnerary; gastrointestinal; nephrotropic; antiinfective; gynecological; antipacterial; diagnosis; neural disorder; immune disorder; reproductive;
                                                                                      Lung cancer associated gene sequences, referred antigens, useful for treatment, prevention, and such as lung cancer -
                                                                                                                                                   WPI; 2000-587514/55
N-PSDB; F18045.
                                                                                                                                                                                                   Ruben SM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    B58169 standard; Protein; 406 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   overlapping NMR resonances.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    which may contain collagen cell adhesion sequences, useful for studying structure and biological activity of collagen
                                                           Claim 11; Page 996-998; 1425pp; English.
                                                                                                                                                                                                                                                                             12-MAR-1999;
                                                                                                                                                                                                                                                                                                           08-MAR-2000;
                                                                                                                                                                                                                                                                                                                                        21-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                       WO200055180-A2
                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                  proliferative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Lung cancer associated polypeptide sequence SEQ ID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       14-MAR-2001 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         B58169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                              (HUMA-) HUMAN GENOME SCI INC (ROSE/) ROSEN C A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               25 gvkgdkgnpgwpgap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity
les 15; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 GVKGDKGNPGWPGAP 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                           2000WO-US05918
                                                                                                                                                                                                                                                                                                                                                                                                                                    disorder;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ĄĄ,
                                                                                                                                                                                                                                                                             99US-0124270.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     25pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                    wound
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 92;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                  healing;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7.9e-07;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                      to as lung cancer
diagnosis of disorders
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
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Polynucleotide sequences F17982 - F18424 encode human lung cancer associated proteins represented in B58106 - B58548. Lung cancer associated proteins and polynucleotide sequences, their agonists,

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RESULT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              antagonists may have neuroprotective; cytostatic; cardioactive; immunomodulatory; muscular active general; vulnerary; gastrointsstinal general; nephrotropic; antiinfective; gynecological; or antibacterial activity. The invention also includes antibodies specific for the protein or polynucleotide sequences. The lung cancer associated polynucleotide sequences may be used for detection of lung cancer, chromosome identification, as chromosome markers, and for numerous other diagnostic or research purposes. The proteins may be used to treat disorders such as neutral impure markers.
                       Isolation of DNA encoding alpha-5(IV)polypeptide of type collagen - to detect mutations in genes for alpha-5(IV) c which produce genetic or acquired basement membrane disore.g. Alport's syndrome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     neural, immune, muscular, reproductive, gastrointestinal, pulmonary, cardiovascular, renal, and proliferative disorders. The proteins may also be used in the treatment of wounds and infectious diseases. Polynucleotide sequences F18425 - F18433 and peptide B58549 are used in the course of the invention for the identification and characterisation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note= "interruption in Gly-X-Y sequence"
Misc-difference 159..160
                                                                                                                                                                                                                                                      Hostikka SL,
                                                                                                                                                                                                                                                                                                               (TRYG/) TRYGGVASON K.
                                                                                                                                                                                                                                                                                                                                                                                                                             07-JUL-1989;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        19-MAY-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US5114840-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note= "
Misc-difference 275..277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mutations; Alport's
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human alpha 5 (IV) of type IV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             25-NOV-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     R23873;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        R23873 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2 VKGDKGNPGWPGAP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                the polynucleotide and protein sequences
                                                                                                                                                                   1992-192174/23.
DB; Q24551.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                   Tryggvason
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A,
                                                                                                                                                                                                                                                                                                                                                                    89US-0377238
                                                                                                                                                                                                                                                                                                                                                                                                                                89US-0377238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note= ":
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers 43..47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 456..458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note=
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         note= "interruption"
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100.0%; Pr
170 0;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            syndrome;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "interruption
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "interruption
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "interruption in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 86; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            basement membranes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            collagen.
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6.3e-05;
hes 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gly-X-Y sequence"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gly-X-Y sequence"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gly-X-Y
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gly-x-Y
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              sequence"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 406;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            diabetes mellitus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                        disorders
                                                                                chain
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RESULT 16
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Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The sequence is that of the alpha 5(IV) polypeptide chain of human type IV collagen, the major component of basement membranes. The protien contains the Gly-X-Y repeat coding sequence typical for collagenous proteins at one end and a typical NC-domain coding sequence at the other end. The sequence can be used to detect mutations in individual genes specific for this chain which can, directly or indirectly, produce several human diseases. It can also be used to determine genetic, e.g. Alport's syndrome, or acquired e.g. diabetes mellitus, disorders of the basement membrane, acquired e.g. diabetes mellitus, disorders of the basement membrane,
                                                  07-JUL-1989;
11-OCT-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                  Collagen alpha5(IV); basement membrane; Alport's syndrome;
nephritis; kidney; renal failure; antibody; diagnosis; COL4A5 gene;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    and as probes or antibodies against these nucleotide sequences. Gene fragments generated through amplifications from human genomic or cloned DNA can also be used for detection and analysis of genes.
           (HOST/) HOSTIKKA S L. (HOYH/) HOYHTYA M.
                                                                            20-DEC-1990;
                                                                                                       07-JUL-1989;
                                                                                                                                 14-JAN-1997
                                                                                                                                                            US5593900-A
                                                                                                                                                                                                                            Peptide
                                                                                                                                                                                                                                                     Domain
                                                                                                                                                                                                                                                                                                                                      Domain
                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                       X chromosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human type IV collagen alpha-5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              W09643;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         W09643 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Disclosure;
(TRYG/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    16-JUN-1997 (first entry)
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366 gikgekgnpggpglp 380
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TRYGGVASON K
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              772 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Fig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                  89US-0377238
94US-0321084
                                                                            9008-0630563
                                                                                                       89US-0377238
                                                                                                                                                                                                                                                                 2; 14pp; English.
                                                                                                                                                                                                                             742..751
                                                                                                                                                                                                                                       544 772
/label= Non-collagenous_domain
                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
1..543
                                                                                                                                                                                                /label= Immunogenic_peptide
/note= "peptide used to rais
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         75.0%;
73.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   15
                                                                                                                                                                                   peptide used to raise diagnostic antibodies (Claim 1)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 69; D
Pred. No. 0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 13;
0.037;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 772;
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Best Local Similarity
Matches 15; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                       Triple helical polypeptide; collagen; cell; adhesion; migr promotion; alphal(IV) chain; solid phase synthesis; study; O-glycosidic bond; deuterium label; structure; blological homotrimeric; heterotrimeric; nuclear magnetic resonance;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   W13024;
Solid phase synthesis of triple-helical branched polypeptide - under O-glycosidic bond and deuterium label retaining conditions,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Collagen alphal(IV) chain containing triple helical polypeptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   30-APR-1997
                                                                            30-JUN-1993;
27-SEP-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   W13024
                          WPI; 1997-011309/01.
                                           Fields
                                                                                                     30-JUN-1993;
                                                                                                                                       US5576419-A.
                                                                                                                                                                                                                  Modified-site
                                                                                                                                                                                                                                                                           Modified-site
                                                                                                                                                                                                                                                                                            Modified-site
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                                                           (MINU ) UNIV
                                                                                                                      19-NOV-1996
                                                                                                                                                                                Modified-site
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 GVKGDKGNPGWPGAP 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gvkgdkgnpgwpgap 39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                           MINNESOTA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first entry)
                                                                           93US-0085633.
95US-0534342.
                                                                                                     93US-0085633
                                                                                                                                                                       41
/note=
                                                                                                                                                                                                        40
/note=
                                                                                                                                                                                                                                          /label- Hyp
25..39
                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                  /note=
                                                                                                                                                                                                                                                                                  /label- Hyp
                                                                                                                                                                                                                                                                                                                                                     /label- Hyp
                                                                                                                                                                                                                                                                                                                                                                      /label-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  peptide; 43
                                                                                                                                                                                                                                                                  'label- Hyp
                                                                                                                                                                                                                                                                                                    'label-
                                                                                                                                                                                                                                                                                                                    label- Hyp
                                                                                                                                                                                                                                                                                                                                     'label-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100.
                                                                                                                                                                                      "linked via
comprising
sequence"
                                                                                                                                                                       "linked via
                                                                                                                                                                                                                          "collagen alpha1(IV) chain residues 1263-1277"
                                                                                                                                                                                                                                                                                                    Нур
                                                                                                                                                                                                                                                                                                                                    Нур
                                                                                                                                                     comprising sequence"
                                                                                                                                                                                                                                                                                                                                                                      Нур
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 92;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                              peptide bond to Pro39 of peptide residues 1-39 of present
                                                                                                                                                                                                peptide bond to F
residues 1-39 of
                                                                                                                                                                                                                                                                                                                                                                                                                                                cell; adhesion; migration;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; DB 19;
.7.1e-07;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 39;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                               ) Pro39 of
)f present
                                                                                                                                                                                                                                                                                                                                                                                                                        activity;
                                                                                                                                                                                                       peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
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RESULT
B58169
ID B5
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Query Match
Best Local S
Matches 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (THP-2), which includes a collagen cell adhesion sequence, known to promote adhesion and migration of various cells (residues 1263-1277 of the collagen alphal(IV) chain), in its triple helix inducing region. THP-2 was prepared by solid phase synthesis under 0-glycosidic bond and deuterium label retaining conditions, without strong acidolysis steps which affect 0-glycosylation and isotopic labelling. THP can be used to study the structure and biological activity of particular collagens as homotrimeric or heterotrimeric forms, with the advantage that different adhesion sequences can be studied with a minimum of Gly-Pro-Hyp triplets, avoiding
                                                                             Lung cancer associated gene sequences, referred
antigens, useful for treatment, prevention, and
such as lung cancer -
                                                                                                                                                                                                                                                                                                                                                                                                     Human; lung cancer associated protein; neuroprotective; cytostatic; cardioactive; immunomodulatory; muscular active; vulnerary; gastrointestinal; nephrotropic; antlinfective; gynecological; antlibacterial; diagnosis; neural disorder; immune disorder; reprodu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        14-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          which may contain collagen cell adhesion sequences, useful for studying structure and biological activity of collagen
                                                  Claim 11; Page 996-998; 1425pp; English.
                                                                                                                                      WPI; 2000-587514/55
N-PSDB; F18045.
                                                                                                                                                                                                                                                                              08-MAR-2000; 2000WO-US05918.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Lung cancer associated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   B58169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             B58169 standard; Protein; 406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   overlapping NMR resonances.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The present sequence is that of triple helical polypeptide (THP-2), which includes a collagen cell adhesion sequence,
                                                                                                                                                                                                                                                                                                          21-SEP-2000
                                                                                                                                                                                                                                                                                                                                    WO200055180-A2
                                                                                                                                                                                                                                                                                                                                                              Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                          proliferative disorder;
                                                                                                                                                                                                          (HUMA-) HUMAN GENOME SCI INC
(ROSE/) ROSEN C A.
                                                                                                                                                                                                                                                    12-MAR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 GVKGDKGNPGWPGAP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Column
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          43 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                  9905-0124270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 25pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           polypeptide sequence SEQ ID 507
                                                                                                                                                                                                                                                                                                                                                                                             wound
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 92;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             B
                                                                                                                                                                                                                                                                                                                                                                                          healing;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                           infectious
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7.9e-07;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                            to as lung cancer diagnosis of disorders
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 43;
                                                                                                                                                                                                                                                                                                                                                                                                       disorder; reproductive;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
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Polynucleotide sequences r17982 - r18424 encode human lung cancer associated proteins represented in B58106 - B58548. Lung cancer associated proteins and polynucleotide sequences, their agonists,

and

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RESULT
R23873
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Best Local S
Matches 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               immunomodulatory; muscular active general; vulnerary; gastrointestinal general; nephrotropic; antiinfective; gynecological; or antibacterial activity. The invention also includes antibodies specific for the protein or polynucleotide sequences. The lung cancer associated polynucleotide sequences may be used for detection of lung cancer, chromosome identification, as chromosome markers, and for numerous other diagnostic or research purposes. The proteins may be used to treat disorders such as neural, immune, muscular, reproductive, gastrointestinal, pulmonary, cardiovascular, renal, and proliferative disorders. The proteins may also be used in the treatment of wounds and infectious diseases.

Polynucleotide sequences F18425 - F18433 and peptide B58549 are used in the course of the invention for the identification and characterisation
Isolation of DNA encoding alpha-5(IV)polypeptide of type IV collagen - to detect mutations in genes for alpha-5(IV) chain which produce genetic or acquired basement membrane disorders e.g. Alport's syndrome
                                                                                                                                                                                                                                                                                07-JUL-1989;
                                                                                                                                                                                                                                                                                                                              07-JUL-1989;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note= "interruption Misc-difference 334..336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note= "
Misc-difference 275..277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note= "interruption in Gly-X-Y sequence" Misc-difference 159..160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            R23873 standard; Protein; 772 AA
                                                                                                                                                                                                                                                                                                                                                                           19-MAY-1992
                                                                                                                                                                                                                                                                                                                                                                                                                      US5114840-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mutations; Alport's
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human alpha 5 (IV) of type IV collagen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   R23873;
                                                                                                                     N-PSDB; Q24551.
                                                                                                                                      WPI; 1992-192174/23.
                                                                                                                                                                                     Hostikka SL,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Misc-difference 43..47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      25-NOV-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                (TRYG/) TRYGGVASON K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                antagonists may have neuroprotective; cytostatic; cardioactive;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2 VKGDKGNPGWPGAP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 polynucleotide and protein sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        406
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                   Tryggvason
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AA;
                                                                                                                                                                                                                                                                                89US-0377238
                                                                                                                                                                                                                                                                                                                              89US-0377238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         456..458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         syndrome;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           93.5%; Score 86; 100.0%; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                               "interruption
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "interruption in Gly-X-Y sequence"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "interruption
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         basement membranes; diabetes mellitus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     in
                                                                                                                                                                                                                                                                                                                                                                                                                                                               in Gly-X-Y sequence"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        in Gly-x-Y
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 21;
6.3e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gly-X-Y
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sequence"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sequence"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
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RESULT 16
W09643
ID W09643
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Best Local
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                                                                                       20-DEC-1990;
07-JUL-1989;
11-OCT-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The sequence is that of the alpha 5(IV) polypeptide chain of human type IV collagen, the major component of basement membranes. The protien contains the Gly-X-Y repeat coding sequence typical for collagenous proteins at one end and a typical NC-domain coding sequence at the other end. The sequence can be used to detect mutations in individual genes specific for this chain which can, directly or indirectly, produce several human diseases. It can also be used to determine genetic, e.g. Alport's syndrome, or acquired e.g. diabetes mellitus, disorders of the basement membrane, and as probes or antibodies against these nucleotide sequences. Gene fragments generated through amplifications from human genomic or cloned DNA can also be used for detection and analysis of genes.
 Hostikka
                                                                                                                                                     07-JUL-1989;
                                                                                                                                                                                                               US5593900-A.
                                                                                                                                                                                                                                                                                       Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Collagen alpha5(IV); basement membrane; Alport's syndrome; nephritis; kidney; renal failure; antibody; diagnosis; COL4A5 gene;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human type IV collagen alpha-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           W09643;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         W09643 standard; Protein;
                                                                                                                                                                                 14-JAN-1997.
                                                                                                                                                                                                                                                                                                                     Domain
                                                                                                                                                                                                                                                                                                                                                                                                             Domain
                                                                                                                                                                                                                                                                                                                                                                                                                           Key
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Disclosure; Fig
                            (HOST/) HOSTIKKA S L.
(HOYH/) HOYHTYA M.
(TRYG/) TRYGGVASON K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             16-JUN-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                366 gikgekgnpgqpglp 380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     chromosome.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 GVKGDKGNPGWPGAP
 SL,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       772 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
Hoyhtya M,
                                                                                      90US-0630563.
89US-0377238.
94US-0321084.
                                                                                                                                                     89US-0377238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2; 14pp; English.
                                                                                                                                                                                                                                                                                       742..751
                                                                                                                                                                                                                                                                                                                   544..772
                                                                                                                                                                                                                                                                                                                                /note= "collagenous domain contains Gly-X-Y tripeptide repeats, interrupted at positions 43-47, 159-160, 275-276, 456-459"
                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
1..543
                                                                                                                                                                                                                                                         /note= "peptide used
                                                                                                                                                                                                                                                                         /label=
                                                                                                                                                                                                                                                                                                                                                                                             /label= Collagenous_domain
                                                                                                                                                                                                                                                                                                    /label= Non-collagenous_domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         75.0%;
73.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               15
                                                                                                                                                                                                                                        "peptide used to raise diagnostic antibodies (Claim 1)"
                                                                                                                                                                                                                                                                      Immunogenic_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         772 AA.
 Tryggvason K;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 69;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 13; Length 772;
0.037;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
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Best Local S
Matches 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The amino acid sequence of a portion (W09643) of the previously unknown human type IV collagen chain, alpha5(IV), was deduced from cDNA clones (see also T47812) obtd. using probes based on conserved sequences of human alpha1(IV) and alpha2(IV) collagen chains and of the Drosophila alpha(IV) chain. It includes a complete non-collagenous domain that shows 83% identity with that of alpha1(IV) and 63% with that of the alpha2(IV) chain. Mutations in the alpha5(IV) gene (COL4A5) are associated with Alport's syndrome. Antibodies raised against a peptide (see also W09644) specific to alpha5(IV) can be used in the diagnosis of basement membrane disorders such as Alport's syndrome.
                                                                                                                                                                                                                                                                                                                                                                                cardioactive; dmmunomodulatory; muscular active; vulnerary;
gastrointestinal; nephrotropic; antiinfective; gynecological;
antibacterial; diagnosis; neural disorder; immune disorder; r
                                                                                                              WPI; 2000-587514/55
N-PSDB; F18056.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 14-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      B58180 standard; Protein; 430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Disclosure; Fig 2A-2B; 12pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    New antibodies specific for human type IV collagen alpha5 chain used to detect absence of this chain in patients with renal fai.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 1997-099481/09
N-PSDB; T47812.
Polynucleotide sequences F17982 - F18424 encode human lung cancer
                             Claim 11;
                                                                                                                                                       Ruben SM
                                                                                                                                                                                (HUMA-) HUMAN GENOME SCI INC (ROSE/) ROSEN C A.
                                                                                                                                                                                                                          12-MAR-1999;
                                                                                                                                                                                                                                                     08-MAR-2000; 2000WO-US05918
                                                                                                                                                                                                                                                                                                           WO200055180-A2
                                                                                                                                                                                                                                                                                                                                       Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                   proliferative
                                                                                                                                                                                                                                                                                                                                                                                                                         Human; lung cancer associated protein; neuroprotective; cytostatic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Lung cancer associated polypeptide sequence SEQ ID 518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         366 g1kgekgnpgqpg1p 380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 GVKGDKGNPGWPGAP 15
                                                                  cancer associated gene sequences,
gens, useful for treatment, prevent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                          Page 1008-1010; 1425pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                       cancer -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                   disorder;
                                                                                                                                                                                                                          9905-0124270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                75.0%;
                                                                                                                                                                                                                                                                                                                                                                    wound
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 69; DB Pred. No. 0.03
2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        English
                                                                                                                                                                                                                                                                                                                                                                    healing;
                                                                   prevention,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    in patients with renal failure
                                                                   referred
tion, and
                                                                                                                                                                                                                                                                                                                                                                    infectious
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BB
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              18;
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                                                                  to as lung
diagnosis o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 772;
                                                                                                                                                                                                                                                                                                                                                                   disorder; reproductive; disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mutations
                                                                   g cancer
of disorders
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RESULT 18
W40114
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        antagonists may have neuroprotective; cytostatic; cardioactive; immunomodulatory; muscular active general; vulnerary; gastrointestinal general; nephrotropic; antiinfective; gynecological; or antibacterial activity. The invention also includes antibodies specific for the protein or polynucleotide sequences. The lung cancer associated polynucleotide sequences may be used for detection of lung cancer, chromosome identification, as chromosome markers, and for numerous other diagnostic or research purposes. The proteins may be used to treat disorders such as neural, immune, muscular, reproductive, gastrointestinal, pulmonary, cardiovascular, renal, and proliferative disorders. The proteins may also be used in the treatment of wounds and infectious diseases. Polynucleotide sequences r18425 - r18433 and peptide B58549 are used in the treatment of the invention for the identification and characterisation of the invention for the identification and characterisation.
                                                                                                                                                                                                                                                                         Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    associated proteins represented in B58106 - B58548. Lung cancer associated proteins and polynucleotide sequences, their agonist
                                                                                                                                                       Region
                                                                                                                                                                                                                                                                                                                 Region
                                                                                                                                                                                                                                                                                                                                                                      Key
                                                                                                                                                                                                                                                                                                                                                                                                                                        COL4A6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human alpha-1(IV) collagen protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            03-JUN-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      W40114;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              W40114 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               of the polynucleotide and protein sequences.
                                  Region
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                                                                                                                Region
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                                                                                                                                                                                                                                                                                                                                                        Region
                                                                                                                                                                                                                                                                                                                                                                                                                          Alports
                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 GVKGDKGNPGWPGAP
                                                                                                                                                                                                                                                                                                                                                                                                                         gene; type
syndrome;
                                                                                                                                                                                                                                                                                                                                                                                                                                       gene;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      430 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                                                   /note- "This
273..274
                                                                                                                                                        /note= "This 377..378
                                                                          /note= "This 429..236
                                                                                                                 /note= "This
403..404
                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
163..171
                                     467..473
                                               /label- VIII
/note- "This
                                                                                                                                                                                /label-
                                                                                                                                                                                                                                                                                                                             note- "This region interrupts a collagenous repeat"
                                                                                                     'label- VII
                                                                                                                                                                                                          note- "This
                                                                                                                                                                                                                         Label-
                                                                                                                                                                                                                                                                                       note- "This region
                                                                                                                                                                                                                                                                                                                                             label-
                                                                                                                                          label-
                                                                                                                                                                                                                                                                'label- III
                                                                                                                                                                                                                                                                                                      label-
                                                                                                                                                                                                                                                                                                                                                                                                                         IV collagen protein; alpha-6(IV); alpha-1(IV);
leiomyomatosis; diagnosis; gene therapy; antibody.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                69.6%;
73.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           15
         "This region interrupts a collagenous repeat"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                532 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 64;
Pred. No.
                                               region
                                                                                      region
                                                                                                                            region
                                                                                                                                                                                                                                                region
                                                                                                                                                                   region
                                                                                                                                                                                                         region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                               interrupts a
                                                                                      interrupts a
                                                                                                                            interrupts a
                                                                                                                                                                   interrupts a
                                                                                                                                                                                                            interrupts
                                                                                                                                                                                                                                                interrupts a collagenous
                                                                                                                                                                                                                                                                                        interrupts a
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             21;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 430
                                               collagenous repeat
                                                                                      collagenous repeat*
                                                                                                                            collagenous repeat"
                                                                                                                                                                   collagenous
                                                                                                                                                                                                            collagenous
                                                                                                                                                                                                                                                                                        collagenous repeat"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    their agonists,
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                                                                                                                                                                  repeat"
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US5731192-A

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RESULT
R71704
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                This sequence is the human alpha-1(IV) collagen protein which is used to analyse a novel human alpha-6(IV) collagen protein encoded by the COLAAG gene. The alpha-6(IV) protein can be used for diagnosis or gene therapy of diseases associated with collagen type IV pathology, especially Alport's syndrome and associated diffuse leiomyomatosis. The polypeptide may also be used for generating monoclonal or polyclonal antibodies having specificity for the alpha-6(IV) polypeptide especially an antibody that is not crossreactive with other collagen proteins including alpha-1(IV), alpha-2(IV) and alpha-5(IV) collagens.
  Assaying collagen fragments in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    17-OCT-1995
                                                         WPI; 1995-131456/17.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      hyperthyroidism; osteoarthritis; v
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Collagen alpha 1 (III) chain precursor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           R71704;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             R71704 standard; protein; 1078 AA
                                                                                                           Bonde M,
                                                                                                                                                                                                                              17-SEP-1993;
                                                                                                                                                                                                                                                                               19-SEP-1994;
                                                                                                                                                                                                                                                                                                                                      23-MAR-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      27-AUG-1993;
                                                                                                                                                                    (OSTE-) OSTEOMETER AS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Example 1; Fig 3; 43pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 1998-216495/19
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          23-JUN-1995;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    19
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             antibody; immunoassay; metabolism; diagnosis; monitoring;
osteoporosis; metastatic progression; Paget's disease;
oidism; bone; resorption; rheumatoid arthritis;
                                                                                                             Qvist P;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     532 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Zhou .J;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                           93DK-0001040
                                                                                                                                                                                                                                                                               94WO-DK00348
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             66.3%;
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Pred. No.
body fluid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
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λq
immunoassay -
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Y96125
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Best Local
                                                                                                                                                                                                        collagen
                                                The present sequence is that of human type III collagen alpha-1. The invention is based on the discovery function is based on the discovery particular collagen fragments in body fluids of patients compared with those of healthy subjects. These fragments are generated with those of healthy subjects. These fragments are generated upon collagen degradation and are partly characterised by the
presence of potential sites for crosslinking. A method for assaying collagen fragments in a body fluid sample is based on the competitive binding to immunological binding partners of collagen
                                                                                                                                                             Disclosure; Column 46-51; 41pp; English.
                                                                                                                                                                                                                                    Assaying type I collagen fragments for diagnosing osteoporosis in postmenopausal woman, involves contacting body fluid with synthet
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Collagen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      syndrome). I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       osteoporosis, metastatic progression, Paget's disease, hyperthyroidism or other conditions involving excessive bone resorption; degredation of type II collagen may indicate rheumatoid arthritis or osteoarthritis; and of type III collagen, vacuiltis syndrome). The method can also be used to assess the toxicity of a compound and to test drugs for their effect on collagen metabolism.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             by immunoassay using antibodies directed against synthetic peptides derived from collagen which contain sites of potential crosslinking. The method is used to diagnose and monitor treatment of disorders of collagen metabolism (degredation of type I collagen may indicate
                                                                                                                                                                                                                                                                                       WPI; 2000-586349/55.
                                                                                                                                                                                                                                                                                                                                                                                               21-JAN-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                 04-NOV-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    29-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US6110689-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Collagen type III; vasculitis syndrome; assay; diagnosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                19-DEC-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Y96125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           antibodies raised against synthetic peptide(s) contg. potential crosslinking sites, to diagnose and monitor disorders of collagen
                                                                                                                                                                                                                                                                                                                         Bonde M,
                                                                                                                                                                                                                                                                                                                                                          (OSTE-) OSTEOMETER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Y96125 standard; Peptide; 1078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Disclosure (Appendix A); Page 55; 87pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Determination of collagen fragments in body fluids can be achieved
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           type
                                                                                                                                                                                                               pausal woman, involves contacting body fluid with peptide and antibody and quantifying by competiti
                                                                                                                                                                                                                                                                                                                         Qvist P;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1078 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          e.g. osteoporosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first_entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             III alpha-1
                                                                                                                                                                                                                                                                                                                                                                                               94US-0187319
                                                                                                                                                                                                                                                                                                                                                                                                                                 97us-0963825
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 78.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 1078;
                                                                                                                                                                                                                   competitive binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                    synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
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0;

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RESULT
R79163
ID R7
XX
AC R7
                                                                                                                                                                                         Query Match
Best Local Similarity
Tatches 11; Conserve
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT
R28916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
Matches 11
                                                                                                                                                                                                                                                                                                                                                                                                                                             Kit for detecting genetic pre-disposition for vascular aneurysms - contains primer to amplify portions of Type III procollagen DN and detects mutation in standard procollagen DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    fragments in the sample and of synthetic peptides derived from collagen and containing crosslinkable sites (see y96118-21). When considering the degradation of type III collagen, the assay can be used as a means of identifying the presence of vasculitis syndrome.
     R79163;
                                        R79163 standard; Protein; 471 AA
                                                                                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                       in the pro-alphal(III) Q30834-48.
                                                                                                                                                                                                                                                                                                                                                       Example 1 describes the determination of the presence of a mutation in the pro-alphal(III) gene. Primers used in PCR are given in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    08-MAY-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Type III procollagen (prior art).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           24-MAR-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                             Disclosure; Fig lA-F; 44pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Kuivaniemi SH,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (UYJE-) UNIV JEFFERSON THOMAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               08-MAY-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       12-NOV-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           W09219754-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mutation; pro-alphal(III); primer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     R28916 standard; Protein; 1196 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 591
                                                                                                                                  738
                                                                            22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          21
                                                                                                                                                                     1 GVKGDKGNPGWPGA 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1992-398878/48.
DB; Q30849.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GVKGDKGNPGWPGA 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gpkgdkgepggpga
                                                                                                                                gpkgdkgepggpga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1078 AA;
                                                                                                                                                                                                                                                                                                      1196 AA
                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Prockop
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               91US-0696607.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    92WO-US03866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 604
                                                                                                                                    751
                                                                                                                                                                                                                            65.2%;
78.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        65.2%;
78.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       <u>D</u>,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 60;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Tromp
                                                                                                                                                                                                                            Score 60; DB
Pred. No. 1.2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PCR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1.1;
                                                                                                                                                                                                                                             13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ω
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 1078;
                                                                                                                                                                                                                                             Length 1196;
                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DNA
                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                           RESULT
Y44171
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         $\times \times \
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      residue bovine alpha 3 (IV) collagen protein sequence, a 68 bp bovine, genomic fragment was amplified. This fragment was then used to a bovine lens cDNA library and a 1.5 kb partial cDNA clone was obtd. (clone KMC15). This encodes 238 residues of the triple helical collagenous domain and all 233 residues of the C-terminal non-collagenous (NC1) domain of the alpha 3 (IV) chain. An isolated and substantially pure nt. having the sequence in Q96290 is claimed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cDNAs encoding human or bovine alpha-3 type 4 collagen peptide(s) useful for detection and therapeutic removal of antibodies associated
                                                                                                                                                                   Recombinant; bovine; alpha3 chain; type IV collagen; detection; Goodpasture syndrome; antibody; blood; tissue; human; nephrotrophism.
                                                                                                                                                                                                                                                                 01-FEB-2000
                                                                                                                                                                                                                                                                                                    Y44171;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Disclosure; Columns 5-8; 33pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N-PSDB; Q96290
                     07-MAR-1995;
                                                          26-OCT-1999.
                                                                                             US5973120-A
                                                                                                                                                                                                                            Bovine type IV collagen alpha3 chain protein.
                                                                                                                                                                                                                                                                                                                                       Y44171 standard; Protein; 471 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Using
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   with Goodpasture syndrome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 1995-262631/34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Hudson BG,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             30-NOV-1990;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                30-NOV-1990;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       13-JUN-1995.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US5424408-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Type IV collagen; alpha 3 chain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Partial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           22-DEC-1995 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (UNIV ) UNIV KANSAS MEDICAL CENT (UYYA ) UNIV YALE.
                                                                                                                                                                                                                                                                                                                                                                                                                                 116 gmkgkkgnsgfpgpp
                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 GVKGDKGNPGWPGAP
                                                                                                                                                                                                                                                                                                                                                                            23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           the PCR with primers derived from each end of the known 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sequence of bovine alpha 3 chain of type IV collagen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         471 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Morrison
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                             (first entry)
                     95US-0399889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             90US-0621091
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  90US-0621091
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               64.18;
66.78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   XE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 59; DB 1
Pred. No. 0.62;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
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16; ω --

Length 471; Indels

0

Gaps

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RESULT
Y56783
PR XXX CCCCCCCCCCXXXX PT XXX P
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                              Disclosure; Columns 19-24;
                                                                                             Diagnosing and treating Goodpasture syndrome using from type IV collagen -
                                                                                                                                                                                                                                                 Hudson BG,
                                                                                                                                                                                                                                                                                                                                                                            30-NOV-1990;
07-MAR-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US6007980-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bos sp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Goodpasture syndrome; type IV collagen; alpha3 chain; bovine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bovine alpha3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Y56783
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      This sequence represents a recombinant bovine alpha3 chain of type IV collagen polypeptide. The sequence corresponds to the 238 amino acids of the C-terminal end of the triple helical domain and all 233 amino acids of the C-terminal non-collagenous domain. Alpha3 chain collagen polypeptides are useful for detecting Goodpasture antibodies in blood or tissue from a human patient and for treating Goodpasture syndrome, especially by neutralising the antibodies in the blood. The polypeptides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 1; Column 31-34; 27pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                  07-OCT-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   28-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     27-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        diagnosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Y56783 standard; Protein; 471 AA
                                                                                                                                                                                                                                                                                           (UNIV ) UNIV KANSAS MEDICAL CENT (UYYA ) UNIV YALE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Hudson BG,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              30-NOV-1990;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Isolated alpha 3 chain of type IV collagen polypeptide useful for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (UYYA ) UNIV YALE.
(UNIV ) UNIV KANSAS MEDICAL CENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 GVKGDKGNPGWPGAP 15
                                                                                                                                                                      2000-096371/08
DB; 246728.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gmkgkkgnsgfpgpp 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1999-610317/52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         a nephrotrophic activity.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     and treatment of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        471 AA;
                                                                                                                                                                                                                                               Reeders
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Reeders
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               type IV
                                                                                                                                                                                                                                                                                                                                                                      90US-0621091.
95US-0399889.
                                                                                                                                                                                                                                                                                                                                                                                                                                               98US-0167364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 90US-0621091
                                                                                                                                                                                                                                                 ST,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ST,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       64.1%;
66.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 collagen
                                                                                                                                                                                                                                                 Morrison
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Morrison KE
                                         26pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Goodpasture syndrome
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Pred. No. 0.62;
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The invention

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method of detecting

Goodpasture antibodies

Sequence

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Best Local Similarity
                                                                                                            A method has been developed for the detecting liver disease. The method comprises: (a) reacting a patient sample with antibodies (Ab) specific for collagen type XVIII (Coll8); (b) measuring the amount of Ab-antigen complex (C) formed as indicator of the amount of Coll8 present; (c) similar analysis of a non-diseased control; and (d) comparing the amounts of Coll8 in the two samples to detect presence or progression of disease. Elevated levels of Coll8 are: (i) indicative of disease, specifically cirrhosis; and (ii) predictive of the prognosis of disease, specifically hepatocellular carcinoma (there is a relationship between coll8 mank levels and tumour size and necrosis, and survival times are significantly higher in patients with higher Coll8 levels). The method provides non-invasive, early and accurate diagnosis of liver disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Diagnosis and monitoring of liver disease by measuring collagen type XVIII levels - with elevated levels indicative of disease, especially cirrhosis or hepatocellular carcinoma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Clement B,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Example 6; Fig 8; 56pp; English
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(FIBR-) FIBROGEN INC.
(INRM ) INST NAT SANTE & RECH MEDICALE.
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Best Local Similarity 66.7%; Pred. No. 2.5;
Matches 10; Conservative 1; Mismatches 4; Indels 0; Gaps 0;
Oy 1 GYKGDKGNPGWPGAP 15
Db 300 gmkgqkgepgapgpp 314

Search completed: May 23, 2001, 16:16:14

Job time: 85 sec
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Minimum DB
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US-08-675-140-6
US-08-931-820-4
US-08-931-820-4
US-08-931-820-7
US-08-949-249-200-7
US-08-949-249-200-7
US-08-949-249-200-7
US-08-893-467A-2
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US-08-702-254A-1
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	Sequence 61, Appl	Sequence 4, Appl1	Sequence 47, Appl			Sequence 45, Appl			Sequence 1, Appli	Sequence 20, Appl	Sequence 3, Appli	Sequence 1, Appli	Sequence 2, Appl1	Sequence 10, Appl	Sequence 8, Appli	Sequence 6, Appli	Sequence 6, Appli

ALIGNMENTS

MOLECULE TYPE: FORIGINAL SOURCE: STRAIN: IV-H1 Sequence 1, Application US/08394748A Patent No. 6013628 APPLICATION NUMBER: US/08/394,748A
FILING DATE: 27-FEB-1995
CLASSIFICATION: 514
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/203,458
FILING DATE: 28-FEB-1994
ATTORNEY/AGENT INFORMATION:
NAME: Carter, Charles G.
REGISTRATION NUMBER: 35,093
REGISTRATION NUMBER: 35,093 GENERAL INFORMATION:
APPLICANT: Skubit TELEPHONE: 612-332-53 TELEFAX: 612-332-9081 INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS: LENGTH: 15 amino acids TYPE: amino acid ZIP: 55402

COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA: NUMBER OF SEQUENCES: 16
CORRESPONDENCE ADDRESS:
ADDRESSE: Merchant & Gould
STREET: 3100 No. 6013628west Center TELECOMMUNICATION INFORMATION TITLE OF INVENTION: Method for Treating Conditions of the TITLE OF INVENTION: Using Polypeptides APPLICANT: APPLICANT: APPLICANT: TYPE: amino acid TOPOLOGY: linear REFERENCE/DOCKET NUMBER: 600 CITY: Minneapolis STATE: MN COUNTRY: ĭ USA Murali, Shobana Agarwal, Anita Wright, Martha M. Gregerson, Balles, Mark Skubitz, 612-332-5300 peptide Amy Dale S P.N. 600.307US01

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Best Local Similarity
Matches 15; Conserv
                                                                                                          Sequence 1, Application PC/TUS9502478 GENERAL INFORMATION:
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GENERAL INFORMATION:
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Best Local Similarity
            TITLE OF INVENTION: Met
TITLE OF INVENTION: Of
NUMBER OF SEQUENCES: 16
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy d
                                                                                                                                                                                                                                                                                                                                                                                                                    TELEFAX: 612-305-1228
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 15 amino acids
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MOLECULE TYPE:
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FILING DATE: 23-AUG-1996
CLASSIFICATION: 530
ATTORNEY/AGENT INFORMATION:
NAME: MUETING, ANN M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOFTWARE: PatentIn Rela
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CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEPHONE: 612-305-1228
   COMPUTER:
                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STREET: 119 NORTH CITY: MINNEAPOLIS
                                                                                                                                                                                                   1 GVKGDKGNPGWPGAP 15
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1 GVKGDKGNPGWPGAP 15
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ADDRESSEE:
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VENTION: SELF-ASSEMBLING AMPHIPHILES FOR
VENTION: CONSTRUCTION OF PEPTIDE SECONDARY STRUCTURES
                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
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: Floppy disk
IBM PC compatible
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                                                            Method for Treating Conditions
Of the Eye Using Polypeptides
                                                                                                                                                                                                                                                                            100.0%; Score 92; DB 3; 100.0%; Pred. No. 1.6e-07;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RAASCH & GEBHARDT, P.A.
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Pred. No. 1.6e-07
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Query Match
Best Local Similarity
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RESULT 4
US-08-534-342-3
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Best Local Similarity
Matches 15; Conserv
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                                                                TELEFAX: 612-332-9081 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILING DATE: 28-FEB-1994 INFORMATION FOR SEQ ID NO: 1:
                                                                                                                                                                                                                                                                                           COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: Patentin Release #1.0, CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MOLECULE TYPE:
ORIGINAL SOURCE:
                                               SEQUENCE CHARACTERISTICS:
                                                                                                TELEPHONE: 612-332-5300
                                                                                                                                                              FILING DATE: 30-JUN-1993
ATTORNEY/AGENT INFORMATION:
NAME: Mueting, Ann M.
                                                                                                                                                                                                          PRIOR APPLICATION DATA:

APPLICATION NUMBER: US 08/085,633
                                                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
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CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE CHARACTERISTICS:
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APPLICATION NUMBER: US 08/203,458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE OF INVENTION:
                                                             TELEPHONE: 612-332-9081
                                                                                                                                 REFERENCE/DOCKET NUMBER:
                                                                                                                                                NAME: Mueting, Ann M. REGISTRATION NUMBER:
                                                                                                                                                                                                                                               FILING DATE: CLASSIFICATION:
                                                                                                                                                                                                                                                                                APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                 ZIP: 55402
                                                                                                                                                                                                                                                                                                                                                                                                               COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                CITY: Minneapolis STATE: MN
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FILING DATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: PCT/US95/02478
TOPOLOGY:
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                                LENGTH:
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                                24 amino acids
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3100 No. 5576419west Center
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VENTION: Mild Solid-Phase Synthesis of Aligned.
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PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                              Floppy disk
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Pred. No. 1.6e-07
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Score 92; DB 1; Pred. No. 2.7e-07;

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                                                                                                                                                                                   Sequence 2, Application US/08534342
Patent No. 5576419
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Best Local S
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APPLICANT: Fields, Gregg B.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                 GENERAL INFORMATION:
APPLICANT: Fields, Gregg B.
TITLE OF INVENTION: Mild Solid-Phase Synthesis of Aligned.
NUMBER OF SEQUENCES: 13
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE CHARACTERISTICS:
LENGTH: 24 amino acids
TYPE: amino acid
TOPOLOGY: unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE OF INVENTION: Mild Solid-Phase Synthesis of Aligned, NUMBER OF SEQUENCES: 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEPHONE: 612-332-5300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FILING DATE: 30-JUN-1993 ATTORNEY/AGENT INFORMATION:
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ADDRESSEE: Merchant
COUNTRY: US
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COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
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REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: US/08
FILING DATE: 03-JUL-1996
                                  STATE: MN
                                                  CITY: Minneapolis
                                                                   STREET:
                                                                                                                                                                                                                                                                                         10 GVKGDKGNPGWPGAP
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                                                                                   DDRESSEE:
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15; Conserv
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                                                                   E: Merchant & Gould
3100 No. 5576419west Center
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3100 No. 5726243west Center
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                    USA
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                                 TELEPHONE: 612-332-530
TELEFAX: 612-332-9081
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                 FILING DATE: 03-JUL-1996
CLASSIFICATION: 525
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/085,633
                                                                                                                                                                                                                                                                                                    COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                  REFERENCE/DOCKET NUMBER: 60
TELECOMMUNICATION INFORMATION:
TELEPHONE: 612-332-5300
                                                                                                                 FILING DATE: 30-JUN-1993
ATTORNEY/AGENT INFORMATION:
NAME: Mueting, Ann M.
REGISTRATION NUMBER: 33,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM:
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ZIP: 55402
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; TOPOLOGY: unknown US-08-534-342-2
                                                                                               TELEPHONE: 612-332-530
TELEFAX: 612-332-9081
INFORMATION FOR SEQ ID NO:
                                        SEQUENCE CHARACTERISTICS:
LENGTH: 39 amino acids
TYPE: amino acid
                                                                                                                                              REFERENCE/DOCKET NUMBER: 60
TELECOMMUNICATION INFORMATION:
TELEPHONE: 612-332-5300
                                                                                                                                                                                                                                                                           CLASSIFICATION: 530
PRIOR APPLICATION UMBER: US 08/085,633
FILING DATE: 30-JUN-1993
                                                                                                                                                                                                                                                                                                                                                                                                        SOFTWARE: PatentIn Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                 ATTORNEY/AGENT INFORMATION:
NAME: Mueting, Ann M.
                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                             NAME: Mueting, Ann M. REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: FILING DATE:
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                                                                                                                                                                                                             33,977
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Query Match Best Local Similarity Matches 15; Conserv 1 GVKGDKGNPGWPGAP 15 Conservative 100.0%; 0 Score 92; DB 1; Pred. No. 4.5e-07; Mismatches Length 39 Indels 0 Gaps

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Sequence 2, Application US/08675140 Patent No. 5726243 GENERAL INFORMATION: TITLE OF INVENTION: Mild Solid-Phase Synthesis of Aligned, NUMBER OF SEQUENCES: 13

CORRESPONDENCE ADDRESS: CITY: Minneapolis STATE: MN ADDRESSEE: Merchant & Gould STREET: 3100 No. 5726243west Center USA

SOFTWARE: Patentin Rel CURRENT APPLICATION DATA: APPLICATION NUMBER: US PatentIn Release #1.0, US/08/675,140 Version #1.25

33,977 600.253-US-01

SEQUENCE CHARACTERISTICS

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US-08-534-342-6
; Sequence 6, Application US/08534342
; Patent No. 5576419
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                                                                                                      RESULT
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Best Local Similarity 73.7
11; Conservative
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Best Local Similarity
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CLASSIFICATION: 530
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/085,633
FILING DATE: 30-JUN-1993
ATTORNEY/AGENT INFORMATION:
NAME: Mueting, Ann M.
                                     GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                  NFORMATION FOR SEQ ID NO:
APPLICANT: Fields, Gregg B.
TITLE OF INVENTION: Mild Solid-Phase Synthesis of Aligned.
                                                                                                                                                                                                                                                                                                                                                                                              REGISTRATION NUMBER: 33,977
REFERENCE/DOCKET NUMBER: 60
TELECOMMUNICATION INFORMATION:
TELEPHONE: 612-332-5300
TELEPAX: 612-332-9081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Fields, Gregg
TITLE OF INVENTION: Mild
                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE CHARACTERISTICS:
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                                                                                                                                                                                                                                                                                                                  TYPE: ami
                                                                                                                                                     25 GVXGXXGXPGWPGAP 39
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                                                                                                                                                                                                                                                                                                                                                LENGTH:
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                                                                                                                                                                                  1 GVKGDKGNPGWPGAP 15
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3100 No. 5576419west Center
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73.3%;
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Solid-Phase Synthesis of Aligned
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Pred. No.
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Pred. No. 4
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RESULT 10
US-08-675-140-5
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 5, Application US/08675140 Patent No. 5726243
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APPLICATION NUMBER: US/08/675,140
FILING DATE: 03-JUL-1996
CLASSIFICATION: 525
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/085,633
FILING DATE: 30-JUN-1993
ATTORNEY/ACENT INFORMATION:
ANALY: A
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NAME: Mueting, Ann M.

REGISTRATION NUMBER: 33,977

REFERENCE/DOCKET NUMBER: 600.

TELECOMMUNICATION INFORMATION:

TELEPHONE: 612-332-5300
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PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/085,633
APPLICATION NUMBER: 30-JUN-1993
APPLICATION:
                                                                                                                                                                                                                                                                                                                                                                                                    ZIP: 55402
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                   COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOCTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
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CORRESPONDENCE ADDRESS:
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TITLE OF INVENTION: Mild Solid-Phase Synthesis of Aligned,
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OPERATING SYSTEM: PC-DOS/MS-DOS
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3100 No. 5726243west Center
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3100 No. 5576419west Center
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Pred. No. 0.0024;
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RESULT
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Best Local :
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                                                                                                   Matches
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INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                TELEFAX: 612-332-9081 INFORMATION FOR SEQ ID NO:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS:
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                           REFERENCE/DOCKET NUMBER: 60
TELECOMMUNICATION INFORMATION:
TELEPHONE: 612-332-5300
                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER: US 00 FILING DATE: 30-JUN-1993 ATTORNEY/AGENT INFORMATION:
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LENGTH: 39 amino acids
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Fields, Gregg
TITLE OF INVENTION: Mild
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NUMBER OF SEQUENCES:
                                          25 GVXGXXGXPGWPGAP
                                                                                                                                                                                       TOPOLOGY:
                                                                                                                                                                                                                                                                                                                      REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                             CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: US/08/675,140 FILING DATE: 03-JUL-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CITY: Minneapolis
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                                                                                                                 Similarity
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3100 No. 5726243west Center
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73.3%;
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                                                                                                               Score 66; DB 1;
Pred. No. 0.0024;
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Pred. No. 0.0024;
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US-08-931-820-4
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                                                                                                                                                                                                                                                                                       Sequence 4, Application US/08931820 Patent No. 6010863
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                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
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                                                                                                                                                                                                                                                                     GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
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INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE/DOCKET NUMBER: 40
TELECOMMUNICATION INFORMATION:
TELEPHONE: (202)672-5300
TELEPHAX: (202)672-5399
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CLASSIFICATION: 435
PRIOR APPLICATION DATA:
                                               CLASSIFICATION: 435
PRIOR APPLICATION DATA:
                                                                                                                 SOFTWARE: Patentin Release #1.0, Version #1.25 (EPO) CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: US 00 FILING DATE: 27-AUG-1993 ATTORNEY/AGENT INFORMATION: NAME: SAXE, Bernhard D.
                                                                                                                                                                                COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOFTWARE: PatentIn Release #1.0, CURRENT APPLICATION DATA:
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MEDIUM TYPE: Floppy disk
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                                                                                                                                                                                                                    TITLE OF INVENTION:
NUMBER OF SEQUENCES:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELLEFAX: (I 904136
                                                                                                                                                                                                                                                                                                                                                                                          293 GDKGEKGSPGFPGEP 307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTMARE: Patentin Belon-
                                                                                                                                                  COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local Similarity
                               APPLICATION NUMBER:
                                                                                   FILING DATE:
                                                                                                  APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TOPOLOGY:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CITY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STREET:
               FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LENGTH: 532 amino acids TYPE: amino acid
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                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
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                                                                                                                                                                                                                                    Assay for collagen degradation
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                                 EP 96202596.1
                                                                                                  US/08/931,820
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Pred. No. 0.19;
3; Mismatches
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RESULT 14
US-08-963-825-21
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Best Local Similarity 78.6%;
Matches 11; Conservative
                                                            TELECOMUNICATION INFORMATION:
TELEPHONE: 212-527-7700
TELEPAX: 212-753-6237
TELEX: 236687
INFORMATION FOR SEQ ID NO: 21:
SEQUENCE CHARACTERISTICS:
LENGTH: 1078 amino acids
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                                                                                                                                                                                                                                 PRIOR APPLICATION NATA:
APPLICATION NUMBER: US/08/187,319
FILING DATE: 21-JAN-1994
ATTORNEY/AGENT INCOMMATION:
NAME: Gogoris, Adda C
                                                                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MOLECULE TYPE: protein HYPOTHETICAL: NO ORIGINAL SOURCE:
MOLECULE TYPE:
ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CORRESPONDENCE ADDRESS:
ADDRESSEE: Darby & Darby PC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE OF INVENTION:
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LENGTH: 1057 amino acids
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | ||||| || |||
590 GPKGDKGEPGGPGA 603
                                             TYPE: amino acid
                                                                                                                                                                                             NAME: Gogoris, Adda C
REGISTRATION NUMBER: 29,714
REFERENCE/DOCKET NUMBER: 4305/08701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME/KEY: Modified-site
LOCATION: 1055
OTHER INFORMATION: /labe
OTHER INFORMATION: /note
                               TOPOLOGY:
                                                                                                                                                                                                                                                                                                                             CLASSIFICATION: 436
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CITY: New York
STATE: New York
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STRANDEDNESS: sir
                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER:
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No. 6110689
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                               linear
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             protein
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Martin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A Method for Assaying Collagen Fragments
in Body Fluids, A Test Kit and Means for Carrying Out the
Method and Use of the Method to Diagnose the Presence of
Disorders Associated with the Metabolism of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /label= Modified
/note= "Ala may be Pro"
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; LENGTH: 471
; TYPE: PRT
; ORGANISM: Calf
US-09-167-364-24
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US-08-399-889-24
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Best Local Similarity
watches 11; Conserv
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; IMMEDIATE SOURCE:
; CLONE: COLLAGEN ALPHA 1 (III)
US-08-963-825-21
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                                                                                                                                                          EARLIER APPLICATION NUMBER: 08/399889
EARLIER FILING DATE: 1995-03-07
NUMBER OF SEQ ID NOS: 25
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 24
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Best Local Similarity
Matches 10; Conserv
Query Match
Best Local Similarity
Matches 10; Conserv
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CURRENT FILING DATE: 1995-03-07
EARLIER APPLICATION NUMBER: 07/621091
EARLIER FILING DATE: 1990-11-30
NUMBER OF SEQ ID NOS: 25
SOFTWARE: Patentin Ver: 2.0
SEQ ID NO 24
                                                                                                                                                                                                                                                                                                                                                                                             Sequence 24, Appli Patent No. 6007980
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                                                                                                                                                                                                                                                                             APPLICANT: Reeders, Stephen T
APPLICANT: Morrison, Karen E
APPLICANT: Hudson, Billy G
TITLE OF INVENTION: Alpha-3 Chain Type IV Collagen Polypeptides
FILE REFERENCE: 951263B
FILE REFERENCE: 951263B
                                                                                                                                                                                                                                                   CURRENT APPLICATION NUMBER: US/09/167,364
CURRENT FILING DATE: 1998-10-07
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APPLICANT: Hudson, Billy G
TITLE OF INVENTION: Alpha-3 Chain Type IV Collagen Polypeptides
FILE REFERENCE: 951263A
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TYPE: PRT
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78.6%;
                  64.18;
66.78;
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66.78;
 Score 59; DB 3; Pred. No. 0.32; 2; Mismatches
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Pred. No.
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0.55;
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                                    Length 471;
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1 GVKGDKGNPGWPGAP 15

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                                                                                     Sequence 7, Application US/09249200 Patent No. 6197931
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                                                                                                                                                                                                                                                               Matches
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Best Local Similarity
                                                    GENERAL INFORMATION: APPLICANT: ELSHOU
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM COmpatible
OPERATING SYSTEM: DOS
SOFTWARRE: FASTSEQ for Windows Version 2.0
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/794,795
FILING DATE: 04-FEB-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Gross, Mitchell
APPLICANT: Lysko, Paul
TITLE OF INVENTION: Human Macro Scavenger Rec
TITLE OF INVENTION: eptor
NUMBER OF SEQUENCES: 9
CORRESPONDENCE ADDRESS:
ADDRESSEE: SmithKilne Beecham Corporation
STREET: 709 Swedeland Road
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REGISTRATION NUMBER: 34,344
REFERENCE/DOCKET NUMBER: ATT
TELECOMMUNICATION INFORMATION:
TELEPHONE: 610-270-5219
                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE CHARACTERISTICS:
LENGTH: 489 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: ATG50009P
FILING DATE: 22-MAY-1996
ATTORNEY/AGENT INFORMATION:
NAME: Han, William T
 APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CLASSIFICATION: 435
PRIOR APPLICATION DATA:
                                     APPLICANT:
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                                                                                                                                                                                          265 GVKGDQGKPGVQGVP 279
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEFAX: 610-270-4026
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amino acid
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ADAMOU, JOHN
GROSS, MITCHELL
LYSKO, PAUL
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                                                ELSHOURBAGY, NABIL
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Pred. No. 0.91;
                                                                                                                                                                                                                                                               Mismatches
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                                                                                                                                                                                                                                                                                           Length 489;
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; STRANDEDNESS:
; TOPOLOGY: lin
; MOLECULE TYPE: |
US-09-249-200-7
                                                                                                                                                                                                                                                                                                         US-08-392-367B-2

; Sequence 2, Application US/08392367B

; Patent No. 5691197
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                                                                                                                                ; TITLE OF INVENTION: A
FITLE OF INVENTION: N
FITLE OF INVENTION: N
FITLE OF INVENTION: F
FITLE OF INVENTION: F
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Best Local Similarity
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PRIOR APPLICATION DATA:
PRIOR APPLICATION UNMBER: 08/794,795
APPLICATION NUMBER: 60/017,699
APPLICATION NUMBER: 60/017,699
EILING DATE: 23-MAY-1996
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STREET: P.U. CITY: Valley Forge STATE: PA
                                                                                                                                                                                                                                                       APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE CHARACTERISTICS:
LENGTH: 489 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE OF INVENTION: HUMAN MARCO SCAVENGER RECEPTOR NUMBER OF SEQUENCES: 9
CORRESPONDENCE ADDRESS:
                                                                                                NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELECOMMUNICATION INFORMATION: TELEPHONE: 610-407-0700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOFTWARE: FastSEQ for Windows Version CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: Diskett
                                                                                                                                                                                                                                        APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                             265 GVKGDQGKPGVQGVP 279
                              STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME: Prestia, Paul F
REGISTRATION NUMBER: 23,031
REFERENCE/DOCKET NUMBER: AT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEFAX: 610-407-0700
TELEX: 846169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: US/09/249,200 FILING DATE: 12-FEB-1999
                                                              ADDRESSEE: Fay, Sharpe, Beall, Fagan ADDRESSEE: Minnich & McKee
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OPERATING SYSTEM:
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          Cleveland
Ohio
                              1100 Superior Avenue Suite 700
                                                                                                                                                                                                                                                     Tryggvason, Karl
Elomaa, Outi
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O. Box 980
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66.78;
                                                                                                                                No. 5691197el Macrophage Receptor with a Collagenous Domain and the Polypeptide Chain Encoded by such a Sequence
                                                                                                                                                                                                                     An Insolated DNA Sequence For a
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    Mismatches

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Pred. No. 0.91;
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COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette, 3.50
MEDIUM TYPE: 720 Kb storab

3.50 inch,

Model 35 SX

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US-08-893-467A-2
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Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
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Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEX: (216) 980162
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                             TITLE OF INVENTION:
TITLE OF INVENTION:
TITLE OF INVENTION:
TITLE OF INVENTION:
                                                          COMPUTER: IBM PS/2, Model 3
OPERATING SYSTEM: DOS 5.0
SOFTWARE: Word Perfect 5.1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/6
                                                                                                                                             COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette,
MEDIUM TYPE: 720 Kb st
                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Kangas, Maarit
TITLE OF INVENTION: An Ins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
ATTORNEY/AGENT INFORMATION: NAME: Minnich, Richard J
                                                                                                                                                                                                                                                                                                                              CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE/DOCKET NUMBER: TR
TELECOMMUNICATION INFORMATION:
TELEPHONE: (216) 861-5582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Minnich, Richard J.
REGISTRATION NUMBER: 24,175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE: Word Perfect CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                                                                                                                                                                 NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 294 GVKGDQGKPGVQGVP 308
                                                                                                                                                                                             COUNTRY: U.S.A.
ZIP: 44114-2518
                                                                                                                                                                                                                               CITY: Cleveland
STATE: Ohio
                             CLASSIFICATION: 435
                                                 FILING DATE:
                                                                                                                                                                                                                                                                STREET:
                                                                                                                                                                                                                                                                                STREET: 1100 Superior Avenue
                                                                                                                                                                                                                                                                                            ADDRESSEE: Fay, Sharpe, Bea ADDRESSEE: Minnich & McKee
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STRANDEDNESS:
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                                                                                                                                                                                                                                                              Suite 700
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                                                                                                            IBM PS/2, Model 35 SX
SYSTEM: DOS 5.0
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                                                                                                                                                                                                                                                                                                             Fay, Sharpe, Beall, Fagan,
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                                                                                                                                              Kb storable
                                                                                                                                                                                                                                                                                                                                                                                                                                                An Insolated DNA Sequence For a
                                                                                                                                                                                                                                                                                                                                                                                              No. 6063901el Macrophage Receptor with a Collagenous Domain and the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                60.9%;
                                                                                                                                                                                                                                                                                                                                                             such a Sequence
                                                                                                                                                                                                                                                                                                                                                                              Polypeptide Chain Encoded by
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                                                               US/08/893,467A
                                                                                                                                                            3.50 inch,
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Pred. No.
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Query Match
Best Local Similarity
"~+~hes 9; Conserv?
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Best Local Similarity
Matches 10; Conser
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                                                                                                                                                                       INFORMATION FOR SEQ ID NO:
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INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                      FILING TO THE CHASSIFICATION: 435
CLASSIFICATION DATA:
PRIOR APPLICATION NUMBER: US 0:
APPLICATION NUMBER: US 0:
APPLICATION NUMBER: 27-AUG-1993
                                                                                                                      SEQUENCE CHARACTERISTICS:
LENGTH: 546 amino acids
TYPE: amino acid
                                                                                                                                                                                                   REFERENCE/DOCKET NUMBER: 40
TELECOMMUNICATION INFORMATION:
TELEPHONE: (202)672-5300
TELEFAX: (202)672-5399
                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                       SOFTWARE: PatentIn Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Zhou, Jing
TITLE OF INVENTION: Collagen COL4A6: Gene, Protein and Method
TITLE OF INVENTION: of Detecting Collagen Deficiency
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEPHONE: (216) 861-5582
                                                                                                                                                                                                                                                                                         FILING DATE: 27-AUG-1993
ATTORNEY/AGENT INFORMATION:
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APPLICANT:
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                                                                                                                                                                         TELLEFAX: ( L. TELLEFAX: 904136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NUMBER OF SEQUENCES:
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                                                                                                         TOPOLOGY:
                                                                                                                                                                                                                                                                REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER:
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STRANDEDNESS: Si
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADDRESSEE:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Application US/08494168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        518 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 E: Foley & Lardner 3000 K Street, N.W., Suite 500
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                                                                                                           linear
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                             60.98;
75.08;
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66.7%;
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                             Score 56;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pred. No. 0
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 3;
0.96;
                                           BB
                                             Length 546;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
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4 GDKGNPGWPGAP 15

Conservative

Mismatches

Indels

0

Gaps

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168 GPKGNPGYPGPP 179

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RESULT 24
US-08-494-168-2
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; ORGANISM: Bovine
US-09-011-735-2
                                                                                                                                                                                                                                                                                                                                                           ; ORGANISM: Bovine US-09-011-735-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-011-735-1
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                                                                                    Sequence 2, Application US/08494168 Patent No. 5731192
                                                                                                                                                                                                                                                                                                                                                                                                             SOFTWARE: PatentIn Ver. 2.0
SEQ ID NO 1
LENGTH: 351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 1, Application US/09011735B Patent No. 6110708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOFTWARE: PatentIn Ver. 2.0
SEQ ID NO 2
LENGTH: 171
                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CURRENT FILING DATE: 1998-0 EARLIER APPLICATION NUMBER:
                                                                     GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EARLIER FILING DATE: 1995-08-17 NUMBER OF SEQ ID NOS: 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Wakamiya, No. 6110708utaka
TITLE OF INVENTION: Recombinant Conglutinin and Producing Method Thereof
FILE REFERENCE: 19036/34548
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EARLIER FILING DATE: 1995-08-17
NUMBER OF SEQ ID NOS: 6
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TITLE OF INVENTION: Recombinant Conglutinin and Producing Method Thereof
FILE REFERENCE: 19036/34548
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                                                                                                                                                                                                                                                                                                                                                                                              TYPE: PRT
APPLICANT: Zhou, Jing TITLE OF INVENTION: Co
                                  APPLICANT:
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112 GLKGEKGAPGETGAP 126
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Collagen COL4A6: Gene, Protein and Method of Detecting Collagen Deficiency
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66.7%;
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RESULT 25
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Best Local Similarity
Matches 9; Conserv
                                                                                                      SEQ ID NO 38
                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 38,
                                                                                                                                                                                           TITLE OF INVENTION:
TITLE OF INVENTION:
TITLE OF INVENTION:
FILE REFERENCE: 2728
                                                                                                                                    CURRENT APPLICATION NUMBER: US/09/219,849
CURRENT FILING DATE: 1998-12-23
NUMBER OF SEQ ID NOS: 50
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INFORMATION FOR SEQ ID NO:
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                                                   ORGANISM: Artificial Sequence
                                                                       TYPE: PRT
OTHER INFORMATION: Description of Artificial Sequence: Synthetic OTHER INFORMATION: amino acid sequence
                                    FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: US 08 FILING DATE: 27-AUG-1993 ATTORNEY/AGENT INFORMATION: NAME: SAXE, Bernhard D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/494,168
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MEDIUM TYPE: Floppy disk
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T: 3000 K Street, N.W., Suite 500
Washington, D.C.
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                                                                                                                                                                                                           WIND, RICHELE D.

VAN DEN BOSCH, TANJA J.

VENTION: SILVER HALIDE EMULSIONS WITH RECOMBINANT COLLAGEN

VENTION: SUITABLE FOR PHOTOGRAPHIC APPLICATION AND ALSO THE

VENTION: PREPARATION THEREOF
                                                                                                                                                                                                                                                                                                 DE WOLF, FREDERIK A.
MOOBROEK, ANDREAS
WERTEN, MARC W.T.
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Pred. No. 4.6;
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92
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ALIGNMENTS

A;Title: Amino acid sequence of the N-terminal aggregation and cross-linking region A;Reference number: A23115; MUID:86004708
A;Accession: A23115
A;Molecule type: protein
A;Residues: 28-236,'KE',239-240,'K',242-243 <GLA> A; Notecule type: mRNA A; Molecule type: mRNA A; Residues: 1-318, 'A', 320-944 <BRA1> A: Cross-references: EMBL: X05561; NID:g30066; A; Molecule type: DNA
A; Residues: 1-5,'L',8-28 <POE>
A; Cross references: EMBL:X12784; NID:g30072
R; Brazel, D.; Oberbaeumer, I.; Dieringer, H.; B
Eur. J. Blochem. 168, 529-536, 1987
A; Title: Completion of the maino acid sequence
A; Reference number: \$00048; MUID:88029471
A; A; Accession: \$00048 A;Molecule type: DNA
A;Residues: 1-28 <SOI2>
A;Cross-references: EMBL:J04217; NID:g180759; PIDN:AAA53097.1; PID:g553233
R;Poeschl, E; Pollner, R; Kuehn, K.
EMBO J. 7, 2687-2695, 1988
A;Title: The genes for the alpha1(IV) and alpha2(IV) chains of human basemu A;Reference number: SO2738; MUID:89030632
A;Accession: SO2738
A;Status: translation not shown A; Molecule type: DNA
A; Residues: 1-1669 < SOII>
A; Residues: 1-1669 < SOII>
A; Cross-references: EMBL:J04217; GB:J05039; NID:g180800; PIDN:AAA53098.1; PID:g180803
A; Note: the nucleotide sequence was submitted to the EMBL Data Library, October 1988
R; Soininen, R.; Huotari, M.; Hostikka, S.L.; Prockop, D.J.; Tryggvason, K.
J. Biol. Chem. 263, 17217-17220, 1988
A; Title: The structural genes for alphal and alpha2 chains of human type IV collagen
A; Reference number: A92690; MUID:89034231 J. Biol. Chem. 264, 13565-135/1, 1989 A;Title: Structural organization of the gene for the alpha-1 chain A;Reference number: S16876; MUID:89340433 A; Molecule type: protein
A; Residues: 271-318, 'A', 320-554 <BRA2>
R; Glanville, R.W.; Qlan, R.Q.; Siebold R;Glanville, R.W.; Qian, R.Q.; Siebold, B.; Eur. J. Biochem. 152, 213-219, 1985 collagen alpha 1(IV) chain precursor - human N;Alternate names: procollagen alpha 1(IV) chain acid sequence not shown; translation not shown Risteli, PIDN:CAA29075.1; PID:g30067 Babel, W.; Glanville, R.W.; Deutzmann, of the alphal chain of human basement J.; Kuehn, human basement type A02863; membran ٧

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R;MacWright, R.S.; Benson, V.A.; Lovello, K.T.; van der Rest, M.; Fietzek, P.P. Blochemistry 22, 4940-4948, 1983
A;Title: Isolation and characterization of pepsin-solubilized human basement membrane A;Reference number: S16910; MUID:84053346
A;Molecule ****
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A;Residues: 534-718,'D',720-836,'Y',838-841,'P',843-903,'Q',905-913,'K',915-997,'K',999-
A;Experimental source: placenta
R;Glanville, R.W.; Rauter, A.
Hoppe-Seyler's Z. Physiol. Chem. 362, 943-951, 1981
A;Title: Pepsin fragments of human placental basement-membrane collagens showing interrula; Reference number: S16908; MUID:82005835
A;Accession: A58517
                                                                                                                                                                                                                                         A;Molecule type: protein
A;Residues: 1435-1461,'H',1463-1482,'X',1484-1491;1501-1514,'X',1516-1519;1534-1553,'X'
R;Siebold, B.; Deutzmann, R.; Kuehn, K.
Eur. J. Biochem. 176, 617-624, 1988
                                                                                                                                                                                                                                                                                                                                                                                                          A;Cross-references: EMBL:M11315; NID:g180817; PIDN:AAA52042.1; PID:g180818
R;Oberbaeumer, I.; Laurent, M.; Schwarz, U.; Sakurai, Y.; Yamada, Y.; Vogeli, G.; Voss, Eur. J. Blochem. 147, 217-224, 1985
A;Title: Amino acid sequence of the non-collagenous globular domain (NC1) of the alpha-A;Reference number: A02864; MUID:85127033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Title: Restricted homology between human alpha-1 type IV and other procollagen chains A;Reference number: S16879; MUID:85216555 A;Accession: S16879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Cross-references: EMBL:M10940; NID:g180421; PIDN:AAA52006.1; PID:g180424 R;Brinker, J.M.; Gudas, L.J.; Loidl, H.R.; Wang, S.Y.; Rosenbloom, J.; Kefalides, Proc. Natl. Acad. Sci. U.S.A. 82, 3649-3633, 1985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        R;Pihlajaniemi, T.; Tryggvason, K.; Myers, J.C.; Kurkinen, M.; Lebo, R.; Cheung, M.C.; J. Biol. Chem. 260, 7681-7687, 1985
A;Title: cDNA clones coding for the Pro-alpha-1(IV) chain of human type IV procollagen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eur. J. Blochem. 143, 545-556, 1984
A;Title: Structure of human-basement-membrane (type IV) collagen. Complete amino-acid A;Reference number: A02863; MUID:85003629
A;Accession: A02863
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A;Cross references: EMBL: 700706; NID: g2954
R;Ebble, J. A.; Golbik, R.; Mann, K.; Kuehn,
EMBO J. 12, 4795-4802, 1993
A;Title: The alpha-1-beta-1 integrin recog
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A;Note: the amino end of the mature form is blocked
R;Soininen, R; Haka-Risku, T; Prockop, D.J.; Tryggvason, K;
                                                                                                                                                                                           A; Title: The arrangement of intra- and intermolecular disulfide bonds A; Reference number: S02550; MUID:89005112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Molecule type: mRNA
A; Residues: 1256-1669 <PIH>
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A; Accession: S01466
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                                                           A;Cross-references: GDB:119791; OMIM:120130
                                                                                                                                                             A; Contents: annotation; disulfide bonds
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A; Residues: 1259-1669 <BRI>
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78/3; 93/3;
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108/3; 129/3; 147/3; 156/3; 184/3; 205/3;
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217/3; 231/
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                                                                                                               A; Notecas type: mRNA
A; Molecule type: mRNA
A; Residues: 1-1669 < MUT>
A; Cross-references: EMBL: J04694; NID: g556296;
A; Cross-references: EMBL: J04694; Ogell, G.
                                                                                                                                                                                                                                                   R:Muthukumaran, G.; Blumberg, B.; Kurkinen, J. Biol. Chem. 264, 6310-6317, 1989
A:Title: The complete primary structure for A; Reference number: A33525; MUID:89197932
A; Accession: A33525
      collagen alpha 1(IV) chain precursor -
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nes 15; Conserv
                                                                                     L.; Theriault, tt. 227, 5-8, 19
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F;917-919/Region: cell attachment (R-G-D) motif
F;917-919/Region: cell attachment (R-G-D) motif
F;917-919/Region: cell attachment (R-G-D) motif
F;916-970/Region: cell attachment (R-G-D) motif
F;1441-169/Domain: carboxyl-terminal nonhelical, NC1 <NC1>
F;1451-1591/Domain: collagen IV carboxyl-terminal repeat <CT1>
F;1451-1591/Domain: collagen IV carboxyl-terminal repeat <CT2>
F;1511-1665/Domain: collagen IV carboxyl-terminal repeat <CT2>
F;27/Modified site: blocked amino end (Ala) (in mature form) #status experimental
F;31,36,39,41,125,434,467,470/Disulfide bonds: interchain *status predicted
F;45,48,78,90,129,156,712,217,228,231,277,295,298,322,343,561,460,463,497,527,543,573,582
99,1117,1132,1150,1165,1182,1185,1188,1206,1235,1265,1283,1304,1319,1328,373,582
99,1117,1132,150,1165,1182,1185,1188,1206,1235,1265,1283,1304,1319,1328,373,583
199,422,425,439,445,448,451,479,485,491,494,503,512,518,524,530,546,549,527,553,518
19,422,425,439,445,448,451,479,485,491,494,503,512,518,524,530,546,549,525,5561,
9,745,748,751,753/Modified site: 4-hydroxyproline (Pro) #status experimental
F;126/Binding site: carbohydrate (Asn) (covalent) #status atypical
F;127,540,947/Modified site: 4-hydroxyproline (Pro) #status atypical
F;1464,477/Lavage site: Gly: 11e (gelatinase B) #status predicted
F;166,775,784,787,790,796,799,804,810,816,822,834,860,863,869,872,875,887,899,899,899
23,1129,1138,1141,1159,1171,1176,1179,1194,1200,1203,1215,1224,1227,1244,1247,1250,12
431,1437/Modified site: 4-hydroxyproline (Pro) #status experimental
F;1120,1268/Modified site: 3-hydroxyproline (Pro) #status absent
F;1214,1824/Modified site: 3-hydroxyproline (Pro) #status absent
F;1214,1824/Modified site: 3-hydroxyproline (Pro) #status absent
F;1311,1616,1622/Disulfide bonds: (or 1570-1665, 1604-1662) #status predicted
F;15570-1662,1604-1665/Disulfide bonds: (or 1570-1665, 1604-1662) #status predicted
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              Conservative
                    100.0%;
15
              0;
                    Score 92;
Pred. No.
                     1.2e-05;
                           DB
                          Length 1669
              Indels
              0;
              Gaps
              0;
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C;Species: Mus musculus (house mouse)
C;Date: 28-May-1986 #sequence_revision 31-Dec-1992 #text_change 16-Jun-2000
C;Accession: A33525; 501454; A28066; A02864; A25636; A29301; S19079; A32003 mouse 3 the alpha-1-chain of mouse collagen A32003; A31766

PIDN:AAA50292.1; PID:g556297

derived amino

acid sequence

of

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A.Molecule type: mRNA
A.Residues: 1149-1396,'S',1398-1424 <NAT>
A.Residues: 1149-1396,'S',1398-1424 <NAT>
A.Residues: 1149-1396,'S',1398-1424 <NAT>
A.Residues: 1149-1396,'B. NID:g192286; PIDN:AAA37342.1; PID:g192287
A.Note: the authors translated the codon CAG for residue 1374 as Arg
A.Note: the authors translated the codon CAG for residue 1374 as Arg
A.Kurkinen, M.; Condon, M.R.; Blumberg, B.; Barlow, D.P.; Quinones, S.; Sau
J. Biol. Chem. 262, 8496-8499, 1397
A.Title: Extensive homology between
A.Reference number: A94680; MUID:87250460
A.Recession: A29301
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Proc. Natl. Acad. Sci. U.S.A. 85, 9679-9682, 1988
A:Title: Alpha1(IV) and alpha2(IV) collagen genes
A:Reference number: A94220; MUID:89071759
A:Accession: A31766
R:Schuppan, D.; Timpl, R.; Glanville, R.W. FEBS Lett. 115, 297-300, 1980
A;Title: Discontinuities in the triple helical A;Reference number: S16909; MUID:80246483
A;Accession: S16909
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A;Title: Head-to-head arrangement of murine type IV A;Reference number: A92702; MUID:89066738
A;Accession: A32003
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Eur. J. Biochem. 147, 217-224, 1985
A;Title: Amino acid sequence of the non-collagenous
A;Reference number: A02864; MUID:85127033
A;Accession: A02864
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J. Blol. Chem. 263, 8706-8709, 1988
A;Title: Structure of the amino-terminal portion of the murine alpha-1(IV) collagen A;Reference number: A28066; MUID:88243724
A;Accession: A28066
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A; Residues: 1110-1135;1189-1316;1342-1383;1418-1487
A; Cross-references: EMBL: M13027
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A; Residues: 1-28 <BUR>
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A;Residues: 1-28 <KAY>
A;Cross-references: EMBL:J04448; NID:g192666; PIDN:AAA37437.1;
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A; Residues: 1441-1669 < KUR>
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A; Residues: 1276-1669 <OBE>
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R;Oberbaeumer, I.; Laurent, M.; Schwarz, U.; Sakurai, Y.; Yamada, Y.; Voge
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en, M.; Vogeli, G.
                                                                       sequence Gly-X-Y of
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                              A:Molecule type: protein
A:Residues: 1-9 <GU2>
R:Schuppan, D.; Glanville, R.W.
Biochem. J. 220, 227-233, 1984
A:Title: Sequence comparison of
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A:Tille: Subunit Structure and assembly of the globular domain of basement-membrane chief accession: $17801

A:Accession: $1435-1443 <a href="https://www.accession.com/bittes/com/b
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R; Weber, S.; Engel, J.; Wiedemann, H.; Glanville, .....
Eux. J. Biochem. 139, 401-410, 1984
A; Title: Subunit structure and assembly of the globular domain of basement-membrane
A; Title: Subunit structure and assembly of the globular domain of basement-membrane
                                       collagen alpha 1(IV) chain - bovine (fragments) C;Species: Bos primigenius taurus (cattle) C;Date: 04-Dec-1992 #sequence_revision 05-Apr-1995 #t. C;Accession: A39474; S16907; S18432; A39419 R;Gunwar, S.; Noelken, M.E.; Hudson, B.G. J. Biol. Chem. 266, 14088-14094, 1991 A;Title: Properties of the collagenous domain of the le helical structure and noncollagenous domain. A;Reference number: A39474; MUID:91310700
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A; Residues: 940-946, 'G', 948-949, 'G', 951-955, 'G', 957;1213-1228, 'x', 1230-1234, 'p', 1236-R; Schuppan, D.; Glanville, R.W.; Timpl, R.
Eur. J. Biochem. 123, 505-512, 1982
A; Title: Covalent structure of mouse type-IV collagen. Isolation, order and partial a A; Reference number: A25991; MUID:82186723
A; Recession: A25991
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A; Residues: 1173-1181,'X',1183-1184,'X',1186-1187,'X',1189-1205,'Q',1207,'XE',1210-12
A; Residues: 1173-1181,'X',1272,'DM';1275,'L',1277-1282;1316-1318,'X',1320-1327,'X',1
B; Weber, S; Engel, J, Wiedemann, H; Glanville, R.W.; Timpl, R.
R; Weber, S; Engel, J, Wiedemann, H; Glanville, R.W.; Timpl, R.
A; Reference number: A39474; A; Accession: A39474
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A; Residues: 940-946, 'X', 948-949, 'X', 951-955, 'X', 957-964, 'X', 966-991, 'X', 993-1003, 'X', 61, 'X', 1063-1065, 'X', 1067-1080, 'X', 1082-1083, 'X', 1085-1106, 'X', 1108-1115, 'DE', 1118-11
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Pred. No. 0.0014;
0; Mismatches
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n of pepsin-resistant segments MUID:84256630 Timpl, R.; Dixit,

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S.N.; Kang, A.H.

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basement-membrane

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C;Species: Homo sapiens (man)
C;Date: 30-Sep-1993 #sequence_revision 27-Feb-1997 #text_change 21-Jul-2000
C;Accession: S22917; A54355; A57079; A37122; I54317; A34850; S18850; I56971;
R;Zhou, J; Hertz, J.M.; Leinonen, A; Tryggvason, K.
J. Biol. Chem. 267, 12475-12481, 1992
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A; Residues: 337-347, 'FL', 350-356 <GU3>
A; Residues: 337-347, 'FL', 350-356 <GU3>
C; Superfamily: collagen alpha 1(IV) chain
C; Keywords: basement membrane; cell binding; coiled coil; disulfide bond; extracellular
F; 31, 34, 37, 46, 61, 69, 78, 84, 87, 102, 110, 122, 125, 137, 140, 143, 149, 155, 158, 161, 164, 185, 188, 199
                                                                                                                 A; Title: Complete primary si
A; Reference number: A37122;
                                                                                                                                                                    A;Cross-references: GB:Z37153; NID:g587203; PIDN:CAA85512.1; PID:g587204 R;Pihlajaniemi, T.; Pohjolainen, E.R.; Myers, J.C. J. Biol. Chem. 265, 13758-13766, 1990
                                                                                                                                                                                                                                                                                                         A; Title: Deletion of the paired alpha5(IV) A; Reference number: A57079; MUID:93361972 A; Accession: A57079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    R;Zhou, J.; Leinonen, A.; Tryggyason, K.
J. Biol. Chem. 269, 6608-6614, 1994
A;Title: Structure of the human type IV collagen
A;Reference number: A54365; MUID:94165049
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  collagen alpha 5(IV) chain precursor, renal splice form - human N;Alternate names: procollagen alpha 5(IV) chain N;Contains: collagen alpha 5(IV) chain precursor, leukocyte splice
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A;Title: Glomerular basement membrane. Identification of dimeric subunits A;Reference number: A39419; MUID:91332055
A;Accession: A39419
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A;Residues: 4-8, E',10-68;69-158;159-321;322-349 <SC2>
A;Residues: 4-8, E',10-68;69-158;159-321;322-349 <SC2>
R;ButKowski, R.J.: Langeveld, J.P.M.; Wieslander, J.; Hamilton, J.
J. Biol. Chem. 262, 7874-7877, 1987
A;Title: Localization of the Goodpasture epitope to a novel chain
A;Reference number: S18432; MUID:87222419
A;Accession: S18432
                                                                                             A; Accession: A37122
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A; Residues: 1-922 <ZH2>
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A; Residues: 1-967 < ZH
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A; Residues: 337-347, 'FL', 350-353 <BU2>
R; Gunwar, S.; Ballester, F.; Kalluri,
                                                              A; Molecule type: mRNA
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  ;Residues: 84-439,'GS',442-624,'LALQ',629-666,'FR',669-887,'R',889-1264,1271-1691 <PIH>;Cross-references: GB:J05558; EMBL:M58526; NID:g1314209
                                                                                                                                                                                                                                                                                                                                                                                                                  Cross-references: GB:U04470; NID:g463378; GB:U04520; NID:g463428; PIDN:AAC27816.1; PII; Chou, J.; Mochizuki, T.; Smeets, H.; Antignac, C.; Laurila, P.; de Paepe, A.; Tryggvas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Accession: A54365
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261, 1167-1169, 1993
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A;Cross-references: GB:S65767; NID:g425563; PIDN:AAD13967.1; PID:g4261667 A;Note: frameshift mutation from a patient with Alport syndrome; five other mutations C;Comment: Prolines and lysines at the third position of the tripeptide repeating uni
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A;Title: Identification of four novel mutations A;Reference number: I54188; MUID:94010948 A;Accession: I54188
                                                                                                                                                                                           A;Cross-references: GB:S75903; NID:g913882; PIDN:AAB33374.1; PID:g913883 A;Note: permature termination mutation from a patient with Alport syndro R;Lemmink, H.H.; Schroeder, C.H.; Brunner, H.G.; Nelen, M.R.; Zhou, J.;
                                                                                                                                                                                                                                                                                                                                                                  R; Nakazato, H.; Hattori, S.; Ushijima, T.; Matsuura, T.; I
Kidney Int. 46, 1307-1314, 1994
A;Title: Mutations in the COLA55 gene in Alport syndrome:
A;Reference number: I56975; MUID:95156893
A;Accession: I56975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Status: translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Molecule type: mRNA
A;Residues: 1284-1291, 'TFLGYLACLY' <GU02>
A;Cross-references: GB:S6919; NID:g545097; PIDN:AAC60613.1;
A;Note: frameshift mutation in patient with Alport syndrome
A;Note: frameshift mutation in patient with Alport syndrome
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A;Residues: 313-324, 'E',326-330 <REN>
A;Residues: 313-324, 'E',326-330 <REN>
A;Cross-references: GB:S59334; NID:g299946; PIDN:AAD13909.1; PID:g4261609
A;Cross-references: GB:S59334; NID:g299946; PIDN:AAD13909.1; PID:g4261609
A;Hostikka, S.L.; Eddy, R.L.; Byers, M.G.; Hoeyhtyae, M.; Shows, T.B.; Tryggvason, Proc. Natl. Acad. Sci. U.S.A. 87, 1606-1610, 1990
A;Title: Identification of a distinct type IV collagen alpha chain with restricted A;Reference number: A34850; MUID:90160375
A; Molecule type: DNA
A; Residues: 1604-1607, 'VHDAYKC' <LEM>
                                                                                                                                                                         Genomics 17, 485-489, 1993
                                                                                                                                                                                                                                                                                        A; Molecule type: DNA
A; Residues: 1595-1602 < NAK>
                                                                                                                                                                                                                                                                                                                                                A; Status: translated from GB/EMBL/DDBJ
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A; Residues: 1448-1477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    R:Myers, J.C.; Jones, T.A.; Pohjolainen, E.R.; Kadri, Am. J. Hum. Genet. 46, 1024-1033, 1990
A;Title: Molecular cloning of alpha5(IV) collagen and A;Reference number: A35335; MUID:90252791
A;Accession: A35335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Cross-references: GB:S69168; NID:g545095; A;Note: kidney_splice form
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Molecule type: mRNA
A; Residues: 1258-1276 <GUO1>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Title: Differential splicing of COL4A5 mRNA A;Reference number: I56971; MUID:94133540 A;Accession: I56971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Genomics 9, 1-9, 1991
A;Title: Characterization of the 3' half of the human
A;Reference number: A37969; MUID:91169491
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A; Residues: 914-1264,1271-1691 <HOS>
A; Cross-references: EMBL:M31115; NID:g180824; PIDN:AAA52045.1;
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A;Title: De novo mutation in the COL4A5 gene converting A;Reference number: I54317; MUID:93244772
A;Accession: I54317
                                                           A; Status: translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Status: nucleic acid sequence not shown
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Note: submitted to the EMBL Data Library, February 1991 A; Note: the authors translated the codon GCC for residue 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Status: translated from GB/EMBL/DDBJ
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R.; Zhou, J.; Try
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A;Map position: Xq22-Xq22
A;Introns: 27/3; 47/3; 77/3; 92/3; 107/3; 128/3; 146/3; 155/3; 182/3; 203/3; 215/3; 229/
A;Introns: 27/3; 47/3; 77/3; 923/1; 973/1; 1086/1; 1086/3; 1185/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 1152/1; 
collagen alpha 2(IV) chain precursor - mouse C;Species: Mus musculus (house mouse) C;Species: Mus musculus (house mouse) C;Date: 04-Dec-1992 #sequence_revision 04-Dec-1992 #text_change 13-Aug-1999 C;Date: 04-Dec-1992 #sequence_revision 04-Dec-1992 #text_change 13-Aug-1999 C;Accession: A33526; A24432; D24432; A25066; B25066; A24364; S19081; B29301;
                                                                                                                                                               RESULT
A33526
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A;Residues: 1-754 <ZHE>
A;Cross-references: GB:U07888; NID:g469547; PIDN:AAB60258.1; PID:g469548
C;Superfamily: collagen alpha 1(IV) chain
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C;Specles: Canis lupus familiaris (dog)
C;Date: 06-Feb-1995 #sequence_revision 06-Feb-1995 #text_change 13-Aug-1999
C;Date: 06-Feb-1995 #sequence_revision 06-Feb-1995 #text_change 13-Aug-1999
C;Accession: A55267
R;Zheng, K.; Thorner, P.S.; Marrano, P.; Baumal, R.; McInnes, R.R.
Proc. Natl. Acad. Sci. U.S.A. 91, 3989-3993, 1994
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en type IV.
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Best Local :
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                                                                                                                                                                                                                                                                                                                           GIKGERGNPGQPGQP
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73.3%;
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Pred. No. 0.038;
3; Mismatches
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                                        :Cross-references: EMBL:J04448;
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A; Molecule type: mRNA
A; Residues: 1480-1572, 'L',1574-1622, 'H',1624-1707
A; Cross references: EMBL:X04647
R; Kaytes, P.; Wood, L.; Theriault, N.; Kurkinen, M
J. Biol. Chem. 263, 19274-19277, 1988
A; Title: Head-to-head arrangement of murine type I
A; Reference number: A92702; MUID:89066738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Molecule type: mRNA
A;Residues: 1466-1622,'H',1624-1707 <KAl>
A;Cross-references: GB:X04410; NID:g50240; PIDN:CAA27998.1; PID:g929678
A;Cross-references: GB:X04410; NID:g50240; Barlow, D.P.; Quinones, S.; Saus,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         R;Vogeli, G.; Horn, E.; Carter, J.; Kaytes, P.S.
FEBS Lett. 206, 29-32, 1986
A;Title: Proposed alignment of helical interruptions in
A;Reference number: A24364; MUID:87005245
A;Accession: A24364
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A;Title: The complete primary structure of mouse alpha-2(IV) collage A;Reference number: A33526; MUID:89197933
A;Accession: A33526
                                                                                                                                                                                                                                                                                                    A; Title: cDNA and protein sequence of the NC1 A; Reference number: A24628; MUID:87054581 A; Accession: A24628
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               R;Kurkinen, M.; Condon, M.R.; Blumberg, B.; J. Biol. Chem. 262, 8496-8499, 1987 A;Title: Extensive homology between the carb A;Reference number: A94680; MUID:87250460 A;Accession: B29301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Title: Homologies between the non-collagenous C-terminal (NC1) globular domains A;Reference number: S19080; MUID:87277427 A;Accession: S19081
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Eur. J. Biochem. 157, 49-56, 1986
A;Title: Structure of mouse type IV collagen.
A;Reference number: A25066; MUID:86220192
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A; Residues: 967-1096, 'G', 1098-1109 <KUl>
A; Cross-references: EMBL: X02896; NID: 950263;
A; Note: the authors translated the codon AAC
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A; Molecule type: DNA
A; Residues: 1-33 <KA2>
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A; Residues: 979-1058;1065-1101;1105-1222;1226-1310;1326-1335;1351-1480 <SC2>
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A; Residues: 970-1480 <SC1>
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A; Residues: 1481-1707 < KUR>
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A; Residues: 964-1096, 'G', 1098-1109 < KU2>
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                                                            в32003
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                                                                                                                                                                              N.; Kurkinen, M.; Vogeli,
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Martin,

G.R.;

NID: g192666;

PIDN:AAA37438.1; PID:g192667

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A; Introns: 15/2; 33/3; 963/1; 1003/3; 1064/3; 1085/3
C; Superfamily: collagen alpha 1(IV) chain
C; Keywords: basement membrane; cell binding; coiled coil; dis
F; 1-28/Domain: signal sequence #status predicted <SIG>
F; 29-1707/Product: collagen alpha 1(IV) chain #status predict
F; 29-171/Domain: 7S #status predicted <7SD>
F; 58-1460/Domain: collagens #status predicted <COL>
F; 141-143/Region: cell attachment (R-G-D) motif
F; 360-362/Region: cell attachment (R-G-D) motif
F; 779-781/Region: cell attachment (R-G-D) motif
F; 984-886/Region: cell attachment (R-G-D) motif
F; 965-967/Region: cell attachment (R-G-D) motif
F; 965-967/Region: cell attachment (R-G-D) motif
F; 965-967/Region: cell attachment (R-G-D) motif
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A;Reference number: S
A;Accession: S19086
A;Molecule type: prot
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C;Species: Homo sapiens (man)
C;Date: 07-Jun-1990 #sequence_revision 03-Oct-1995 #text_change 22-Jun-1999
C;Date: 07-Jun-1990 #sequence_revision 07-Jun-1999
C;Date
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F;1447-1449/Region: cell attachment (R-G-D) motif
F;1447-1449/Region: cell attachment (R-G-D) motif
F;1481-1707/Domain: carboxyl-terminal nonhelical, NC1 *status predicted <NC1>
F;1481-1589/Domain: repeat NC1 *status predicted <NC12>
F;1590-1707/Domain: repeat NC1 *status predicted <NC12>
F;42,47,51,53,481,483/Disulfide bonds: interchain *status predicted
F;138,1270/Binding site: carbohydrate (Asn) (covalent) *status predicted
F;656-676,1544-1550,1653-1660/Disulfide bonds: *status predicted
F;656-676,1544-1550,1653-1067,1101,1113,1119,1143,1170,1200,1242,1305,1368,1391/Bind
F;985,988,997,1003,1028,1031,1067,1101,1113,1119,1143,1170,1200,1242,1305,1368,1391/Modi
F;985,988,997,1003,1028,1031,1067,1101,1113,1119,1143,1170,1200,1242,1305,1368,1391/Modi
F;1009,1012,1018,1021,1024,1037,1040,1043,1046,1052,1058,1070,1098,1110,1128,1140,1149,177,1383,1386,1401,1408,1420,1423,1429,1444,1465,1468,1471,1477/Modified site: hydroxypro
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A; Cross references: EMBL:M23333
R; Weber, S.; Engel, J.; Wiedemann, H.; Glanville, R.W.;
Eur. J. Blochem. 139, 401-410, 1984
A; Title: Subunit structure and assembly of the globular
A; Reference number: S17801; MUID:84132058
A; Molecule type: mRNA
A; Residues: 1254-1398,'V',1400-1712
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                                                                                        A;Reference number: S00007; MUID:87219158
A;Accession: S00007
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A; Accession: A32024
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C; Genetics:
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A; Cross-references: EMBL: J04210;
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nes: procollagen alpha 2(IV) chain
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66.7%;
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Pred. No.
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A; Note: the sequence from Fig. 4 is inconsistent R; Eble, J.A.; Golbik, R.; Mann, K.; Kuehn, K. EMBO J. 12, 4795-4802, 1993
A; Title: The alpha-1-beta-1 integrin recognition A; Reference number: S39614; MUID:94038963
A; Accession: S39615
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A; Residues: 1-33 <SOII>
A; Residues: 1-33 <SOII>
A; Cross-references: EMBL: J04217; EMBL: J05039; NID: g180759; PIDN: AAA53097.1;
A; Cross-references: EMBL: J04217; EMBL: J05039; NID: g180759; PIDN: AAA53097.1;
CROSSING RESIDENCE OF THE STANDARD RESIDENCE
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submitted to the EMBL Data Library, June
a-Reference number: $17678
A; Molecule type: protein
A; Residues: 407-570 <EBL>
R; MacWright, R.S.; Benson, V.A.;
Biochemistry 22, 4940-4948, 1983
                                                                                                                                                                                                                                                                                                                                                                                                                    A; Molecule type: protein A; Residues: 37-247 <SIE1>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Note: this sequence was submitted to the EMBL Data Library, R;Siebold, B.; Qian, R.Q.; Glanville, R.W.; Hofmann, H.; Deut. Eur. J. Biochem. 168, 569-575, 1987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Molecule type: DNA
A; Residues: 1-33 <SOI2>
A; Cross-references: EMBL: J04217; NID: g180759; PIDN: AAA53097.1; PID: g553233;
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A;Title: The structural genes for alphal and alpha2 chains of human type A;Reference number: A92690; MUID:89034231
A;Accession: B32117
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A; Residues: 1-682, 'G', 684-1043 <BRA>
A; Cross-references: EMBL: X05562; NID: g30075; PIDN: CAA29076.1;
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A; Residues: 1347-1350;1377-1383;1426-1432;1465-1471;1529-1535;1625-1630
A; Residues: ucleotide sequence not shown
A; Brazel, D.; Pollner, R.; Oberbaeumer, I.; Kuehn, K.
Eur. J. Biochem. 172, 35-42, 1988
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A;Note: 1399-Tie was also found
R;Hostikka, S.L.; Tryggvason, K.
FEBS Lett. 224, 297-305, 1987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Title: Construction of a
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A; Residues: 1-470,'P',472-682,'G',684-1043 <OBE>
A; Cross-references: EMBL:X05562; NID:g30075; PIDN:CAA29076.1;
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                                          Lovello,
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                                          K.T.; van der
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Isolation and characterization of nce number: S16910; MUID:84053346

pepsin-solubilized

human

basement membrane

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F:1-28/Domain: signal sequence #status predicted <SIG>
F:29-37/Domain: anino-terminal nonhelical, NH1 <NH1>
F:29-57/Domain: amino-terminal nonhelical, NH1 <NH1>
F:39-57/Domain: amino-terminal nonhelical, NH1 <NH1>
F:36-364/Region: interrupted helical
F:362-364/Region: cell attachment (R-G-D) motif
F:368-870/Region: cell attachment (R-G-D) motif
F:368-870/Region: cell attachment (R-G-D) motif
F:369-891/Region: cell attachment (R-G-D) motif
F:1059-1071/Region: cell attachment (R-G-D) motif
F:1059-1071/Region: cell attachment (R-G-D) motif
F:1059-1071/Region: cell attachment (R-G-D) motif
F:1452-1454/Region: cell attachment (R-G-D) motif
F:1452-1593/Comain: collagen IV carboxyl-terminal repeat <CT1>
F:1452-1593/Comain: collagen IV carboxyl-terminal repeat <CT1>
F:1452-1593/Comain: collagen IV carboxyl-terminal repeat <CT1>
F:42,47,51,53,137,483,485/Disulfide bonds: interchain #status predicted
F:57,87,90,102,165,168,225,239,242/Binding site: carbohydrate (Lys) (covalent) #status F:57/Modified site: 5-hydroxylysine (Lys) #status atypical
F:63,75,96,114,120,123,332,159,186,189,188,201,213,216,219,496,499,955,964,1103,1115
F:87,90,102,165,168,225,239,242/Modified site: 5-hydroxylysine (Lys) #status experimental
F:209/Modified site: 4-hydroxyproline (Pro) #status atypical
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A;Recession: $02550

A;Molecula type: protein
A;Residues: 1480-1535;545-1614;1617-1662,'H',1664-1700,'G';1705-1708;1710-1712
A;Note: the sequence form Fig. 7 is inconsistent with that shown in Fig. 11 in h
R;Myers, J.C.; Howard, P.S.; Jelen, A.M.; Dion, A.S.; Macarak, E.J.
J. Biol. Chem. 262, 9231-9238, 1987
A;Title: Duplication of type IV collagen COOH-terminal repeats and species-speci
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        G;Function:
A;Description: structural component of basement membrane C;Superfamily: collagen alpha 1(IV) chain
C;Keywords: basement membrane; cell binding; coiled coil;
F;1-28/Domain: signal sequence #status predicted <
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Cross-references: GDB:119792; OMIM:120090
A:Map position: 13q34-13q34
A:Map position: 13q34-13q34
A:Introns: 15/2; 33/3; 1347/1; 1380/1; 1429/1; 1468/1; 1532/1; 1527/3 #status incomplete
A:Introns: 15/2; 33/3; 1347/1; 1380/1; 1429/1; 1468/1; 1532/1; 1527/3 #status incomplete
A:Note: the alpha 1(IV) and alpha 2(IV) chain genes are encoded on opposite strands with
C:Complex: Type IV collagen is a heterotrimer of two alpha 1(IV) chains (see PIR:CGHU4B)
domains (with disulfide and desmosine cross-links), dimeric associations among trimer ca
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A; Residues: 1040, 'L',1042-1398,'V',1400-1418,'M',1420-1635,'V',
A; Cross-references: EMBL:M24766; NID:g537328; PIDN:AAA52043.1;
R; Siebold, B.; Deutzmann, R.; Kuehn, K.
Eur. J. Biochem. 176, 617-624, 1988
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A;Title: Partial structure of the human alpha-2(IV)
A;Reference number: S01450; MUID:88085168
A;Accession: S01450
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A; Residues: 1486-1574, 'I', 1576-1712 <MYE>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          81-1185 <GLA>
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Residues: 490-492,'X',494-496;675-677,'G',679-680,'G',682,684-685,'P'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gene: GDB:COL4A2
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PID:9537329
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C;Date: 22-Nov-1993 *sequence_re;
C;Accession: S23296; C34493; A29;
R;Ninomiya, Y; Castagnola, P;
maguchi, N.; Olsen, B.R.
in Extracellular Matrix Genes, S;
A;Title: The molecular biology o
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A;Accession: S23296
A;Status: not compared with control of the contro
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A;Title: Tissue-specific forms of type IX collagen-proteoglycan arise from A;Reference number: A34493; MUID:90062114
A;McCession: C34493
A;Mcleculo: times
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A;Mclecule type: protein
A;Residues: 147-165;170-180,'X',182-188 <MC2>
R;Lozano, G.; Olsen, B.R.
submitted to the EMBL Data Library, April 199; A;Reference number: S22062
A;Accession: S22062
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A; Molecule type: mRNA
A; Residues: 1-174 < NIS>
A; Residues: 1-174 < NIS-
A; Residues: 1-174 < NIS-
BMB: M28660; NID: g211625; PIDN: AAA48709.1; PID: g211626
A; McCormick, D.; van der Rest, M.; Goodship, J.; Lozano, G.; Ninomiya, Y.;
Proc. Natl. Acad. Sci. U.S.A. 84, 4044-4048, 1987
A; Title: Structure of the glycosaminoglycan domain in the type IX collagen.
A; Reference number: A29032; MUID: 87231947
A; Accession: A29032
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A;Title: Construction and characterization A;Reference number: A18856; MUID:86026268 A;Accession: A18856 A;Molecule type: mRNA
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                                                                                                                                                                 Biochemistry 24, 4223-4229, 1985
                                                                                                                                                                                                        A; Note: this se
R; Ninomiya, Y.;
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A; Residues: 404-633; 644-677 <LO2>
A; Cross-references: EMBL: M11327
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A; Residues: 401, 'RA', 404-631, 'D', 633-677 <LO1>
A; Cross-references: EMBL:M11327
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A; Residues: 120-195 <
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sion: S23296; C34493; A29032; B29032; S22062; B28754; A18856; B18856; A28518;
iya, Y.; Castagnola, P.; Gerecke, D.; Gordon, M.K.; Jacenko, O.; LuValle, P.;
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GB:M16715; NID:g211365; PIDN:AAA48644.1;
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Ann. N. Y. Acad. Sci. 460, 38-46, 1985
A;Title: The structure of type IX collagen.
A;Reference number: $22238; MUID:86185164
A;Accession: $22239
A;Molecule type: protein
A;Residues: 542-567 <MAY>
C;Genetics:
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C;Superfamily: unassigned collagens
C;Keywords: Chondroitin sulfate proteoglycan; coiled coil; extracellular matrix; glycopi
F;1-21/Domain: signal sequence #status predicted <SIG>
F;22-677/Product: collagen alpha 2(XI) chain #status predicted <MAT>
F;23-161/Domain: collagenous COL3 #status predicted <COL3>
F;162-178/Domain: non-collagenous NC3 #status predicted <NC3>
F;179-517/Domain: collagenous COL2 #status predicted <NC2>
F;189-547/Domain: non-collagenous NC2 #status predicted <NC2>
F;518-547/Domain: collagenous NC2 #status predicted <NC1>
F;63-677/Domain: non-collagenous NC2 #status predicted <NC1>
F;63-677/Domain: non-collagenous NC2 #status predicted <NC1>
F;63-677/Domain: non-collagenous NC1 #status predicted <NC1>
F;63-677/Domain: non-collagenous NC1 #status predicted <NC1>
F;158,178/Modified site: 4-hydroxyproline (Pro) #status experimental
F;167/Binding site: Chondroitin sulfate (Ser) (covalent) #status experimental
F:167/Binding site: Chondroitin sulfate (Ser) (covalent) #status experimental
                                                                                                                                                                                                                                                                                                                                                    C;Accession: A54849; PHÓ844; S16316; I56328; A30296; I84686
R;Christiano, A.M.; Greenspan, D.S.; Lee, S.; Uitto, J.
J. Biol. Chem. 269, 20256-20262, 1994
A;Title: Cloning of human type VII collagen. Complete primary sequence of the alpha1(VI A;Reference number: A54849; MUID:94327588
A;Accession: A54849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               N;Alternate names: procollagen alpud 1(vii) curr...
C;Species: Homo sapiens (man)
C;Date: 04-Nov-1994 #sequence_revision 04-Nov-1994 #text_change 20-Sep-1999
C;Date: 04-Nov-1994 #sequence_revision 04-Nov-1994 #text_change 20-Sep-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             collagen alpha 1(VII) chain precursor – human N.Alternate names: procollagen alpha 1(VII) chain
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A;Accession: S23813
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                         A;Title:
                                                                                                                    R;Tanaka,
                                                                                                                                                        A;Cross-references: GB:L02870; NID:g987124; PIDN:AAA75438.1; PID:g987125
                                                                                                                                                                                                                                                         A; Molecule type: mRNA
                                                                                                                                                                                                                                                                                                            A; Status: not compared with conceptual translation
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Molecule type: protein
A; Residues: 170-180, 'X', 182-184 <VAN>
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J. Biol. Chem.
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A; Residues: 433-435,'X', 437-450;542-562 <NI3>
R; Huber, S.; Winterhalter, K.H.; Vaughan, L.
J. Biol. Chem. 263, 752-756, 1988
                                                                                                                                                                                                                     Residues: 1-2944 <CHR>
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Residues: 156-1
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/Binding site: carbohydrate (Lys) (covalent) #status experimental
/Modified site: allysine (Lys) #status predicted
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, T.; Takahashi, K.; Furukawa, F.; Imamura, S.
Biophys. Res. Commun. 183, 958-963, 1992
Molecular cloning and characterization of type VII collagen cDNA
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156-159,'x',161-166,'x',168-173,'x',175-178 <нив>
sst, м.; Мауре, R.
am. 263, 1615-1618, 1988
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66.7%;
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Pred. No.
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                                             F:36-201/Domain: von Willebrand factor type A reperts of the power of 
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C; Function:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     R; Greenspan, D.S.
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A; Molecule type: mRNA
A; Residues: 'EFR', 372-517, 'DV', 520-540, 'W', 542-1255 <RES>
A; Residues: 'EFR', 372-517, 'DV', 520-540, 'W', 542-1255 <RES>
A; Cross references: GB: S51236; NID: g262308; PIDN: AAB24637.1; PID: g262309
A; Cross references: GB: S51236; NID: g262308; MOrris, N.P.; Glanville, R.W.; l
J. Biol. Chem. 264, 3822-3826, 1989
A; Pitle: Cleavage of type VII collagen by interstitial collagenase and type
A; Reference number: A30296; MUID: 89139437
A; Rocession: A30296
A; Molecule type: protein
A; Residues: 'A', 1240-1246, 'G', 1248-1250, 'XE', 1253-1255, 'Q', 1257, 'E'; 2032,''
A; Note: two reported peptides cannot be reliably located
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A:Molecule type: mRNA
A:Residues: 2395-2871,'S',2873-2944 <RE2>
A:Cross-references: GB:L06862; NID:g388713; PIDN:AAA89196.1; PID:g388714
A;Cross-references: GB:L06862; NID:g388713; PIDN:AAA89196.1; PID:g388714
A;Christlano, A.M.; Ryynaenen, M.; Uitto, J.
Proc. Natl. Acad. Sci. U.S.A. 91, 3549-3553, 1994
A;Title: Dominant dystrophic epidermolysis bullosa: identification of a Gly
A;Reference number: A55255; MUID:94224777
                                                                                                                                                                                            C;Superfamily: unassigned collagens; animal Kunitz-type proteinase inh C;Keywords: coiled coil; extracellular matrix; glycoprotein; hydroxyly. F:1-16/Domain: signal sequence #status predicted <SIG> F:17-2944/Product: collagen alpha 1(VII) chain #status predicted <MAT> F:17-1253/Domain: amino-terminal nonhelical #status predicted <NCI> F:17-1253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Cross-references: GDB:128750; OMIM:120120
A;Map position: 3p21.3-3p21.3
A;Note: defects in this gene can result in dominant and recessive
A;Note: there are 118 introns
C;Complex: type VII collagen is probably a homotrimer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Contents: annotation C; Comment: Prolines and lysines at the third position of the tripeptide repeating uni
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A;Title: The carboxyl-terminal half of type
A;Reference number: 148103; MUID:93271985
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A;Title: Noncollagenous (NC1) domain of collagen
A;Reference number: 156328; MUID:93107742
A;Accession: 156328
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A; Title: Human type VII collagen: cDNA cloning and chromosomal mapping of the gene. A; Reference number: S16316; MUID:91334380
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A;Molecule type: mRNA
A;Molecule type: mRNA
A;Molecule type: mRNA
A;Residues: 'EFR', '340-475, 'RALSTASHSTLCWRATRWHPCNRGSHWTRAACEPCNRPASHRAARAG', '524-528,'
A;Cross-references: DDBJ:D11152; DDBJ:D13694; NID:g453698; PIDN:BAA02853.1; PID:g4536
A;Experimental source: keratinocyte
A;Experimental source: keratinocyte
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A;Restdues: 815-892, 'E', 894-1439 <PAR>
A;Cross-references: GB:M65158; GB:S49017; NID:g180914; PIDN:AAA96439.1; PID:g180915
A;Experimental source: keratinocyte
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Status: translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                    structural component of extracellular polymer associated with anchorin unassigned collagens; animal Kunitz-type proteinase inhibitor homology
factor type A repeat homology
ype III repeat homology <FN1>
ype III repeat homology <FN2>
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e III repeat homology <FN3>
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e III repeat homology <FN5>
e III repeat homology <FN7>
e III repeat homology <FN8>

factor

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homology <VWA2>

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C; Date: 1/-nuy
C; Accession: A33249
C; Accession: A32249
R; Saitta, B; Buttice, G.; Gambino, R.
Biochem. Biophys. Res. Commun. 158, 633-639, 199
Biochem. Biophys. Res. Commun. 158, 633-639, 199
A; Title: Isolation of a putative collagen-like
A; Title: Isolation of a putative collagen-like
A; Title: A32249; MUID:89149773
                                                                                                                                            A; Molecule type: mRNĀ A; Rosldues: 1-1414 <EXP>
A; Residues: 1-1414 <EXP>
A; Cross-references: EMBL: M92040; NID: g161435; PIDN: AAA30035.1; PID: g161436
A; Cross-references: EMBL: M92040; NID: g161435; PIDN: AAA30035.1; PID: g161436
C; Superfamily: collagen alpha 2(I) chain; fibrillar collagen carboxyl-termic; Keywords: colled coil; extracellular matrix; glycoprotein; trimer; triple F; 1207-1414/Domain: fibrillar collagen carboxyl-terminal homology <FCC>
                                                                                                                                                                                                                                                                                                                                                                                                                                    collagen alpha 2(1) chain homolog - sea urchin (Strongylocentrotus purpuratus)
(;Species: Strongylocentrotus purpuratus (purple urchin)
C;Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 10-Sep-1999
C;Accession: $23809
R;Exposito, J.Y.; d'Alessio, M.; Solursh, M.; Ramirez, F.
J. Biol. Chem. 267, 15559-15562, 1992
A;Title: Sea urchin collagen evolutionarily homologous to vertebrate pro-alpha-2(I) col
A;Reference number: $23809; MUID:92348411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      F:1170-1172/Region: cell attachment (R-G-D) motif
F:1189-1253/Region: cystcine/prolinerrich
F:1254-2783/Region: interrupted helical
F:1234-2783/Region: cell attachment (R-G-D) motif
F:1334-1336/Region: cell attachment (R-G-D) motif
F:2008-2010/Region: cell attachment (R-G-D) motif
F:2553-2553/Region: cell attachment (R-G-D) motif
F:2784-2944/Domain: carboxyl-terminal nonhelical #status predicted <NC2>
F:287-6-2929/Domain: animal Kunitz-type proteinase inhibitor homology <BPI>F:287-6-2929/Domain: animal Kunitz-type proteinase inhibitor homology <BPI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       F:337,786,1109/Binding site: carbohydrate (Asn) (covalent) #status predicted F:2167,2176,2185,2188,2664,2667,2673/Modified site: 4-hydroxyproline (Pro) #: F:2625,2631/Modified site: 5-hydroxylysine (Lys) #status experimental F:2625,2631/Binding site: carbohydrate (Lys) (covalent) #status experimental F:2625,2634,2802,2804/Disulfide bonds: interchain #status predicted
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C:Species: Paracentrotus lividus (common urchin)
C:Date: 17-Aug-1989 #sequence_revision 17-Aug-1989 #text_change 19-Jan-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
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                                                                                                                                                                                                                                                                                                                                                                Status: preliminary
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   Query Match
Best Local :
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Pred. No. 0.
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Pred. No. 0.41;
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R;Turner, N.; Mason, P.J.; Brown, R.; Fox, M.; Povey, S.; Rees, A.; Pusey J. Clin. Invest. 89, 592-601, 1992
A;Title: Molecular cloning of the human Goodpasture antigen demonstrates A; Reference number: A43928; MUID:92147878
A; Accession: A43928
                                                                                                                                                                                                                                                                   A; Molecule type: mRNA A; Residues: 1453-1593, A; 74; 1595-1670 < MOR> A; Residues: 1453-1593, A; 74; 1595-1670 < MOR> A; Cross-references: GB:S55790; NID:g234418; PIDN:AAB19637.1; C; Comment: Prolines and lysines at the third position of the ed and subsequently O-glycosylated.
                                                                                                                                                                                                                                                                                                                                                                                                         A;Note: sequence extracted from NCBI backbone (NCBIP:13363); R;Morrison, K.E.; Mariyama, M.; Yang-Feng, T.L.; Reeders, S.T. Am. J. Hum. Genet. 49, 545-554, 1991
A;Title: Sequence and localization of a partial cDNA encoding A;Reference number: A39786; MUID:91353570
A;Accession: A39786
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A; Residues: 1386-1670 <QUI>
A; Residues: 1386-1670 <QUI>
A; Cross-references: GB: M92993; NID: g177895; PIDN: AAA21610.1; PID: g177896
A; Note: sequence extracted from NCBI backbone (NCBIP: 115597)
R; Quinones, S.; Bernal, D.; Carcla-Sogo, M.; Elena, S.F.; Saus, J.
J. Biol. Chem. 269, 17358, 1994
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C;Date: 28-Oct-1994 #sequence_revision 03-Oct-1995 #text_change 22-Jun-1999 C;Accession: A54763; A43928; A44043; A45971; A39786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                J. Biol. Chem. 268, 12090-12094, 1993
A;Title: The human mRNA encoding the Goodpasture
A;Reference number: A45971; MUID:93280184
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R;Quinones, S.; Bernal, D.; Garcia-Sogo, M.; Elena, S.F.; Saus,
J. Biol. Chem. 267, 19780-19784, 1992
A;Title: Exon/intron structure of the human alpha 3(IV) gene en
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A;Residues: 1331-1524,'I',1526-1670 <TUR>
A;Cross-references: GB:M81379
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A;Title: Complete primary structure of the human alpha3(IV)
A;Reference number: A54763; MUID:94364994
                                                                                                                                                                                         A; Gene: GDB: COL4A3
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A; Residues: 1427-1444 <BER>
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A;Experimental source: kidney
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A; Residues: 1-1670 <MAR>
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collagen alpha 3(IV) chain precursor, long splice form - human
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             chain. Coexpress
                                                                                                                                                                                                                                                                                                repeating un
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          it to be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ဂ
                                                   C.WO
                                                                               strands
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                                                   alpha
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mong trimer amino-terminal domains er associations in the interruptee C; Function:
A; Description: minor structural cc C; Superfamily: collagen alpha 1(IT) C; Reywords: alternative splicing; F; 1.28/Domain: signal sequence #st
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F;31-1438/Region: cell attachment (R-G-D) motif
F;910-793/Region: cell attachment (R-G-D) motif
F;910-793/Region: cell attachment (R-G-D) motif
F;1154-1156/Region: cell attachment (R-G-D) motif
F;1306-1308/Region: cell attachment (R-G-D) motif
F;1343-1343/Region: cell attachment (R-G-D) motif
F;1432-1434/Region: cell attachment (R-G-D) motif
F;1431-1551/Domain: carboxyl-terminal repeat <CT2>
F;1451-1551/Domain: collagen IV carboxyl-terminal repeat <CT2>
F;1561-1665/Domain: collagen IV carboxyl-terminal repeat <CT2>
F;313,33,93,41,125,422,476,479,682,722,809,1307/Disulfide bonds: interchain #status predi
      N; Alternate
C; Species: H
                        collagen alpha 1(XVI) chain precursor - human N;Alternate names: procollagen alpha 1(XVI) chain
                                                                                                                                                                                                                                                             δã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Molecule type: A; Residues: 2-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Virology 177, 445-451, 1990
A;Title: Capsomer proteins of bacteriophage
A;Reference number: A46345; MUID:90320115
A;Accession: B46345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C;Species: phage PRD1
C;Date: 17-Feb-1994 #sequence_revision 17-Feb-1994 #text_change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               F;253/Binding site: carbohydrate (Asn) (covalent) *status predicted F;1460-1548,1493-1551/fisulfide bonds: (or 1460-1551, 1493-1548) *status F;1505-1511,1616-1622/Disulfide bonds: *status predicted F;1507-1662,1604-1665/Disulfide bonds: (or 1570-1665, 1604-1662) *status
                                                                                                                        RESULT
                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Cross-references: GB:M55568; NID:g215745; PIDN:AAA32446.1; PID:g215746
A;Accession: D46345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C; Accession: B46345; D46345
R; Bamford, J.K.H.; Bamford, D.H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       N;Alternate names:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                             Query Match
Best Local S
Matches 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Superfamily: phage PRD1 gene V protein Keywords: capsid protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Molecule type: DNA
Residues: 1-340 <BAM>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               V protein - phage PRD1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1189 GAKGDRGAPGFPGLP 1203
                                                                                                                                                                                                             1:|||||:|| ||
124 GIKGDKGDPGAPG
                                                                                                                                                                                                                                                                                                                             / Match 66.3%;
Local Similarity 76.9%;
nes 10; Conservative
                                                                                                                        14
                                                                                                                                                                                                                                                                   1 GVKGDKGNPGWPG 13
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            Homo
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S <BA2>
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66.7%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 62; DB
Pred. No. 0.33
2; Mismatches
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                                                                                                                                                                                                                                                                                                                                                     Score 61;
Pred. No.
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0.094;
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0.33;
                                                                                                                                                                                                                                                                                                                                                                                Length 340;
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                                                                                                                                                                                                                                                                                                                          0;
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collagen alpha 4(IV)
                              CGHU1B
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RESULT

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chain precursor

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R;Kimura, submitted
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F;375-505/Domain: collagenous COL9 #status predicted <COL9>
F;375-505/Domain: collagenous COL9 #status predicted <COL9>
F;521-554/Domain: collagenous COL0 #status predicted <COL9>
F;539-541/Region: cell attachment (R-G-D) motif
F;572-630/Domain: collagenous COL1 #status predicted <COL7>
F;652-722/Domain: collagenous COL6 #status predicted <COL5>
F;652-722/Domain: collagenous COL6 #status predicted <COL5>
F;887-938/Domain: collagenous COL4 #status predicted <COL4>
F;973-987/Domain: collagenous COL5 #status predicted <COL5>
F;973-987/Domain:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Note: may play a role in forming elastic connections at fibril surfaces C; Superfamily: unassigned collagens C; Keywords: cell binding; coiled coil; extracellular matrix; glycoprotein; hydroxylys
                                                                                                                                                                                                                                                                                                                                                                                                                                                            F;1005-1007/Region: cell attachment (R-G-D) motif F;1011-1432/Domain: collagenous COL2 *status predicted <COL2> F;1011-1432/Domain: collagenous COL2 *status predicted <COL1> F;1276-1228/Region: cell attachment (R-G-D) motif F;1472-1577/Domain: collagenous COL1 *status predicted cOL1> F;1578-1603/Domain: carboxyl-terminal nonhelical *status predicted F;47,327/Binding site: carbohydrate (Asn) (covalent) *status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             F;1-21/Domain: signal sequence #status predicted <SIG> F;22-1603/Product: collagen alpha 1(XVI) chain #status predicted <MAT> F;22-333/Domain: amino-terminal nonhelical #status predicted <NC11> F;334-1577/Region: interrupted helical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Description: structural component of extracellular fibrous polymer as a A; Note: may play a role in forming elastic connections at fibril surfaces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Gene: GDB:COL16A1
A;Cross references: GDB:134045; OMIM:120326
A;Map position: 1p34-1p34
C;Complex: type XVI collagen may be a homotrimer, or a heterotrimer of two
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Molecule type: mRNA A; Residues: 403-419, 'GR', 421-536, 'P', 538-846, 'VM' <KIM> A; Residues: 403-419, 'GR', 421-536, 'P', 538-846, 'VM' <KIM> A; Cross-references: EMBL:X14963; NID:g29984; PIDN:CAA33085.1; C; Comment: Prolines and lysines at the third position of the eed and subsequently O-glycosylated.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Title: Molecular cloning and partial characterization of a novel collagen chain, al A;Reference number: PQ0612; MUID:93203161
A;Accession: PQ0612
A;Molecule type: mRNA
A;Residues: 'GGR',421-536,'P',538-1159,'P',1161-1162,'P',1164,'P',1166-1603 <YAM>
A;Cross-references: GB:S57132; NID:9298641; PIDN:AAB25797.1; PID:9298642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Residues: 1-1603 < PAN>
A; Cross-references: EMBL: M92642; NID: g180757; PIDN: AAA58427.1; PID: g180758
A; Experimental source: skin fibroblasts
R; Yamaguchi, N.; Kimura, S.; McBride, O.W.; Hori, H.; Yamada, Y.; Kanamori
J. Biochem. 112, 856-863, 1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C;Date: 28-Oct-1994 #sequence_revision 28-Oct-1994 #text_change 20-Sep-1 C;Accession: S23810; PQ0612; S08012 R;Pan, T.C.; Zhang, R.Z.; Mattei, M.G.; Timpl, R.; Chu, M.L. Proc. Natl. Acad. Sci. U.S.A. 89, 6565-6569, 1992 A;Title: Cloning and chromosomal location of human alpha1(XVI) collagen. A;Reference number: S23810; MUID:92335339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C; Function
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A; Accession: S08012
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Experimental source: placenta
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                                                                                                                                                                                                                                                 Query Match
Best Local S
                                                                                                                                                                                                           Matches
681 GQKGDAGNPGDPGTP
                                                                                                                                                                                                                                                       Local Similarity
                                                                                                  1 GVKGDKGNPGWPGAP 15
                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                       66.3%;
73.3%;
                                                                                                                                                                                                     Score 61; DB
Pred. No. 0.44
0; Mismatches
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                                                                                                                                                                                                                                                            DB 2;
0.44;
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tripeptide r
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                                                                                                                                                                                                     0;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        <NC01>
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F;62-1466/Region: interrupted helical
F;94-96/Region: cell attachment (R-G-D) motif
F;145-147/Region: cell attachment (R-G-D) motif
F;145-147/Region: cell attachment (R-G-D) motif
F;189-191/Region: cell attachment (R-G-D) motif
F;310-312/Region: cell attachment (R-G-D) motif
F;724-726/Region: cell attachment (R-G-D) motif
F;724-726/Region: cell attachment (R-G-D) motif
F;989-991/Region: cell attachment (R-G-D) motif
F;989-991/Region: cell attachment (R-G-D) motif
F;1212-1214/Region: cell attachment (R-G-D) motif
F;1217-1214/Region: cell attachment (R-G-D) motif
F;1467-1690/Domain: carboxyl-terminal nonhelical, NC1 <NC1>
F;1471-1569/Domain: carboxyl-terminal repeat <CT1>
F;1471-1569/Domain: collagen IV carboxyl-terminal repeat <CT2>
F;1471-1569/Domain: collagen IV carboxyl-terminal repeat <CT2>
F;1471-1569/Domain: collagen IV carboxyl-terminal repeat <CT2>
F;1471-1569/Region: cell carboxyl-terminal repeat <CT2>
F;1471-1569/Region: collagen IV carboxyl-terminal r
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           er associations in the interrupted helical domain (with disulfide and desmosine cross-: C;Function:
A;Description: minor structural component of extracellular basement membrane in kidney C;Superfamily: collagen alpha 1(IV) chain
C;Keywords: basement membrane; colled coll; extracellular matrix; glycoprotein; hydrox; F;1-38/Domain: signal sequence #status predicted <SIG>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A:Introns: 39/1; 1406/1; 1445/1; 1508/1; 1603/3 *status incomplete A;Note: the alpha 3(IV) and alpha 4(IV) chain genes are encoded on opposite strands with C;Complex: this minor type IV collagen is thought to form a heterotrimer of two alpha 3; mong trimer aminor-terminal domains (with disulfide and desmosine cross-links), dimeric er associations in the interrupted helical domain (with disulfide and desmosine cross-li
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A; Molecule type: mRNA
A; Residues: 1-1690 < LEI>
A; Cross-references: GB: X81053; NID: g574805; PIDN: CAA56943.1; PID: g574806
A; Cross-references: GB: X81053; NID: g574805; PIDN: CAA56943.1; PID: g574806
A; Cross-references: GB: X81053; NID: g574805; PIDN: CAA56943.1; PID: g574806
A; Cross-references: GB: X81053; NID: g574805; PIDN: CAA56943.1; PID: g574806
A; Cross-references: GB: X81053; NID: g574805; PIDN: CAA56943.1; PID: g574806
A; Cross-references: GB: X81053; NID: g574805; PIDN: CAA56943.1; PID: g574806
A; Cross-references: GB: X81053; NID: g574805; PIDN: CAA56943.1; PID: g574806
A; Cross-references: GB: X81053; NID: g574805; PIDN: CAA56943.1; PID: g574806
A; Cross-references: GB: X81053; NID: g574805; PIDN: CAA56943.1; PID: g574806
A; Cross-references: GB: X81053; NID: g574805; PIDN: CAA56943.1; PID: g574806
A; Cross-references: GB: X81053; NID: g574805; PIDN: CAA56943.1; PID: g574806
A; Cross-references: GB: X81053; NID: g574805; PIDN: CAA56943.1; PID: g574806
A; Cross-references: GB: X81053; NID: g574805; PIDN: CAA56943.1; PID: g574806
A; Cross-references: GB: X81053; NID: g574805; PIDN: CAA56943.1; PID: g574806
A; Cross-references: GB: X81054; PID: g574805; PIDN: CAA56943.1; PID: g574806
A; Cross-references: GB: X81054; PID: g574806; 
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F;39-1690/Product: collagen alpha 4(IV) chain #status predicted <MAT>
F;39-61/Domain: amino-terminal nonhelical, NH1 <NH1>
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A; Residues: 1407-1424, 'G', 1426-1430, 'A', 1432-1439, 'L', 1441-1507 <KANN>
A; Residues: 1407-1424, 'G', 1426-1430, 'A', 1432-1439, 'L', 1441-1507 <KANN>
A; Cross-references: GB:L01475; GB:L01476
A; Note: the codons given for 1438-Asp (GAG) and 1443-Gly (GCA) are inconsistent C; Comment: Prolines and lysines at the third position of the tripeptide repeatin ed and subsequently O-glycosylated.
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A;Accession: A55360
A;Status: nucleic acid sequence not shown
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A:Title: Complete primary structure of the human type IV collagen alpha4(IV)
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A;Map position: 2q35-2q37
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A;Residues: 1219-1658,'FE',1661-1690 <SUG>
A;Cross-references: DDBJ:D17991; NID:g440365;
                                                                                                                                                                                                                                                                                                                                                                                                                                            142,669/Binding site: carbohydrate (Asn) (covalent) #status predicted 1400-1566,1513-1569/Disulfide bonds: (or 1480-1569, 1513-1566) #status 1525-1531,1634-1641/Disulfide bonds: #status predicted 1525-1531,1634-1641/Disulfide bonds: #status predicted 1588-1683,1622-1686/Disulfide bonds: (or 1588-1686, 1622-1683) #status
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4; Mismatches
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J. Biol. Chem. 266, 16149-10120, 1...
A;Title: The complete primary structure of
A:Deference number: S16366; MUID:91340768
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                                                                                                                                                                                                                                                                 A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-310 <NAH>
                                                                                                                                                                                                                                                                                                                                                            J. Biol. Chem. 269, 16443-16448, 1994 A; Title: An alternative transcript of the A; Reference number: A54041; MUID:94266842
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C;Superfamily: collagen alpha 1(IV) chain
C;Keywords: alternative splicing; basement membrane;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Molecule type: mRNA
A; Residues: 1-1763 <JBI>
A; Cross-references: GB:M
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C;Species: Ascaris suum (pig roundworm)
C;Date: 04-Dec-1992 #sequence_revision 04-Dec-1992 #text_change 13-Aug-1999
                                                                                                                                                                 A;Gene: COL3A1
C;Superfamily: collagen alpha 1(I) chain; fibrillar collagen carboxyl-terminal homolo.
                                                                                                                                                                                                                                                                                                                                                                                                         R; Nah, H.D.; Niu, Z.; Adams, S.L.
J. Biol. Chem. 269, 16443-16448,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C; Date: 13-Sep-1996 #sequence_revision
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         collagen alpha 1(III) chain - chicken (fragment)
C:Species: Gallus gallus (chicken)
                                                                                                                                                                                                                                             A; Cross-references:
                                                                                                                                                                                                                                                                                                                                       A; Accession: I50696
                                                                                                                                                                                                                                                                                                                                                                                                                                                           C; Accession:
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ily: collagen alpha 1(IV) chain
                                               l Similarity
10; Conserv
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266, 16149-16156, 1991
                                               Conservative
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73.3%;
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                                                                                                                                                                                                                                          NID: g520456; PIDN: AAA83409.1;
                                                                 Score 60; DB 2
Pred. No. 0.12;
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Pred. No. 0.48;
                                                  Mismatches
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281 GVKGERGSPGGPGA

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A;Molecule type: mRNA
A;Rosidues: 2-636 <GL2>
A;Residues: 2-636 <GL2>
A;Cross-references: EMBL:X70369
A;Cysuperfamily: collagen alpha 1(1) chain; fibrillar collagen carboxyl-terminal homology;
C;Keywords: colled coll; extracellular matrix; glycoprotein; trimer; triple helix
F;408-636/Domain: fibrillar collagen carboxyl-terminal homology <FCC>
                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Molecule type: mRNA
A; Residues: 308-482 <FRA>
A; Cross-references: GB: M21354; NID: g203500; PIDN: AAA40942.1; PID: g203501
R; Glumoff, V.; Maekelae, J.K.; Vuorio, E.
submitted to the EMBL Data Library, February 1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Biochim. Biophys. Acta 1217, 41-48, 1994
A;Title: Cloning of cDNA for rat pro alpha-1(III) collagen
A;Reference number: $41067; MUID:94114571
A;Steather. 541067
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J. Biol. Chem. 267, 23753-23758, 1992
A:Title: Isolation and sequencing of cDNAs and A:Reference number: S28777; MUID:93054733
A:Accession: A45137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          C;Species: Rattus norvegicus (Norway rat)
C;Date: 13-Jan-1995 #sequence_revision 13-Jan-1995 #text_change 13-Aug-1999
C;Accession: S41067, A29905, S31924
R;Glumoff, V.; Maekelae, J.K.; Vuorio, E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Experimental source: basement membrane
A; Note: sequence extracted from NCBI backbone (NCBIP:118549)
C; Superfamily: collagen alpha 1(IV) chain
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A; Accession: S31924
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Cross-references: EMBL:X70369; NID:g57915; PIDN:CAA49832.1; PID:g57916 R;Frankel, F.R.; Hsu, C.Y.J.; Myers, J.C.; Lin, E.; Lyttle, C.R.; Komm, DNA 7, 347-354, 1988
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A; Residues: 1-623 <KAM>
                                                                                                                                                                                                                                                                                                                                                                   A; Status: preliminary
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Best Local Similarity

Matches 10; Conserv
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Best Local
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     30
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                                               GVKGDKGNPGWPGA 14
GVKGERGSPGGPGA 43
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71.4%;
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Pred. No. 0.24
1; Mismatches
                                                                                                                     Score 60;
Pred. No.
                                                                                                 Mismatches
                                                                                                                     DB 2;
0.25;
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0.24;
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                                                                                                                                         Length 636;
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A;Tille: A;E Common A; Tille: A;E Common A; Tille: A;E Common A; A;Accession: A38002; MUID:80026028
A;Accession: A38002
A;Accession: A38002
A;Molecule type: protein
A;Residues: 423-571 <BEN>
A;Residues: 423-571 <BEN>
R;Lang, H; Glanville, R.W.; Fietzek, P.P.; Kuehn, K.
A;Title: The covalent structure of calf skin type III collagen. IV. The amino A:Reference number: A38003; MUID:80026029
                                                                                                                                                  A;Accessium: A;Accessium A;Accessium A;Molecule type: protein A;Rolecule type: protein A;Residues: 572-808 cLAN>
A;Residues: 572-808 cLAN>
R;Dewes, H.; Fietzek, P.P.; Kuehn, K.
R;Dewes, H.; Fietzek, P.P.; Fietzek, Fietzek, R.
R;Dewes, H.; Fietzek, P.P.; Kuehn, K.
R;Dewes, H.; Fietzek, P.P.; Fietzek, 
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c)Species: Bos primigenius taurus (cattle)
C;Species: Bos primigenius taurus (cattle)
C;Date: 04-Dec-1986 #sequence_revision 04-Dec-1986 #text_change 07-May-1999
C;Accession: A02862; A38001; A38002; A38003; A38004; A38005; S71946
R;Fietzek, P.P.; Allmann, H.; Rauterberg, J.; Henkel, W.; Wachter, E.; Kuehr Rioppe-Seyler's Z. Physiol. Chem. 360, 809-820, 1979
A;Title: The covalent structure of calf skin type III collagen. I. The aminc A;Reference number: A02862; MUID:80026026
A;Accession: A02862
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Hoppe-Seyler's Z. Physiol. Chem. 360, 833-840, 1979
A;Title: The covalent structure of calf skin type III collagen. III. The amino acid A;Reference number: A38002; MUID:80026028
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A;A;Cession: A38001
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A; Residues: 1-242 < FIE>
R; Dewes, H; Fietzek, P.P.; Kuehn, K.
Hoppe-Seyler's Z. Physiol. Chem. 360,
A; Title: The covalent structure of cal
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                                                                               A; Molecule type: protein A; Residues: 809-947 < DEW2>
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J. Biol. Chem. 26
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: von Willebrand factor type C repeat
    Fietzek, P.P.;
Z. Physiol. Ch
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269, 16443-16448, 1994
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Glanville, R.W.;
em. 360, 861-868,
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calf skin type II
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A; Residues: 87-106;1017-1029;1037-1049 <HEN>
C; Comment: Prolines at the third position of the tripeptide repeating unit (G-X-Y) are h C; Comment: Prolines at the tpird position of the tripeptide repeating unit (G-X-Y) are h C; Comment: The type III collagen molecule is a trimer of identical chains, linked to ead C; Superfamily: collagen alpha 1(I) chain; fibriliar collagen carboxyl-terminal homology; C; Keywords: colled coll; extracellular matrix: glycoprotein; hydroxylysine; hydroxyprolife; 1-1049/Product: collagen alpha 1(III) chain #status experimental <CAB>
F; 1-14/Region: amino-terminal nonhelical telopeptide
F; 15-1040/Region: helical
F; 587-589/Region: cell attachment (R-G-D) motife
F; 752-754/Region: cell attachment (R-G-D) motife
F; 875-898/Region: cell attachment (R-G-D) motife
F; 875-898/Region: cell attachment (R-G-D) motife
F; 935-937/Region: cell attachment (R-G-D) motife
F; 935-937/Region: cell attachment (R-G-D) motife
F; 91041-1049/Region: cell attachme
A; Molecule type: mRNA
A; Residues: 1-1196 <ALA>
A; Cross-references: EMBL:X14420; NID:930057; PIDN:CAA3
A; Cross-references: EMBL:X14420; NID:930057; PIDN:CAA3
A; Note: the complete sequence is not shown
R; Benson-Chanda, V; Su, M.W.; Well, D.; Chu, M.L.; Ra
Gene 78, 255-265, 1989
A; Title: Cloning and analysis of the 5' portion of the
A; Reference number: PE0011; MUID:89378752
A; Accession: PE0011
A; Molecule type: DNA
A; Residues: 1-176 <BEN>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Molecule type: mRNA
A; Residues: 1-1240, 'V; 1242-1466 <PRC>
A; Cross-references: EMBL:X14420; NID:g30057; PID
R; Ala-Kokko, L.; Kontusaari, S.; Baldwin, C.T.;
Blochem. J. 260, 509-516, 1989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Blochem. J. 318, 497-503, 1996
A;Title: Cross-link analysis of the C-telopeptide domain from type III collagen
A;Reference number: S71946; MUID:96404897
A;Accession: S71946
A;Molecule type: protein
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A;Accession: A38005
A;Molecule type: protein A;Residues: 948-1049 <ALL>A;Experimental source: skin R;Henkel, M.
                                                                                                                                                                                                                                                                                                                                                                                                         A; Reference number: S04642; MUID:89350838 A; Accession: S04642
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A; Title: Structure
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;Species: 4-Apr-1984 #sequence_revision 01-Sep-1995 #text_change 21-Jul-2000;

pate: 24-Apr-1984 #sequence_revision 01-Sep-1995 #text_change 21-Jul-2000;

parcession: S05272; S04642; PE0011; S01726; S04887; A90399; A94562; I51868
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3; Mismatches
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T.; Kuivaniemi, H.;
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A; Molecule type: mRNA
A; Residues: 302-423 <CHI>
A; Cross references: GB:S79877; NID:g119576;
R; Seyer, J.M.; Kang, A.H.
Blochemistry 17, 3404-3411, 1978
Blochemistry 17, 3404-3411, 1978
A; Title: Covalent structure of collagen: amin
A; Reference number: A90414; MUID:79000343
A; Accession: A90414
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Biochem. J. 311, 939-943, 1993
A:Title: Abnormal type III collagen produced
A:Pafarence number: S59511; MUID:96067614
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A; Molecule type: mRNA
A; Residues: 149-163, 'G', 164-240, 'D', 242-471, 'D', 473-487, 'L', 489, 'S', 491-613, 'Y', 615-6
A; Cross-references: EMBL:X15332; NID:929545; PIDN:CAA33387.1; PID:9930045
A; Note: the authors' translation of residues 905-932 is inconsistent with the nucleot R; Seyer, J.M.; Kang, A.H.
Biochemistry 16, 1158-1164, 1977
Biochemistry 16, 1158-1164, 1977
A; Title: Covalent structure of collagen: amino acid sequence of cyanogen bromide pept A; Reference number: A90399; MUID:77134724
A; Accession: A90399
                                                                                                                                                           A:Experimental source: liver R:Lee, B.; Vitale, E.; Superti-Furga, A.; Steinmann, J. Biol. Chem. 266, 5256-5259, 1991
A:Title: G to T transversion at position +5 of a spli A:Reference number: I55349; MUID:91161621
A:Accession: I55349
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A;Note: the authors translated th
R;Janeczko, R.A.; Ramirez, F.
Nucleic Acids Res. 17, 6742, 1989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Cross-references: GB:M26939; NID:g180813; PIDN:AAA52040.1; PID:g180814 R;Toman, P.D.; Ricca, G.A.; de Crombrugghe, B. Nucleic Acids Res. 16, 7201, 1986 Nucleic Acids Res. 16, 7201, 1986 A;Title: Nucleotide sequence of a cDNA coding for the amino-terminal reg A;Reference number: S01726; MUID:88303360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Molecule type: protein
A;Residues: 'V',169-225,229-277,'A',279-292,'D',294,'S',296-398
A;Experimental source: liver
A;Note: author submitted corrections to A90399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          submitted to the Atlas, December A; Reference number: A94562 A; Accession: A94562
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A; Residues: 'V', 169-225, 229-232, 'P', 234-292, 'D', 294-398
A; Experimental source: liver
A; Note: sequence corrected by A94562; attachment of 2-0-
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A;Title: Nucleotide and amino acid sequences
A;Reference number: S04887; MUID:89386015
                                                                                                                                                                                                                                                                                                                                     A; Molecule type: protein
A; Residues: 399-675,'N', 677-727 <SEY3>
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A; Residues: 1-170 < TOM>
                    R; Seyer, J.M.;
                                               A;Cross-references: GB:M59312; NID:g180815;
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A; Residues: 537-605
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A; Residues: 186-194 <MIL>
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J. 311, 939-943, 19
Mainardi, C.; Kang,
9, 1583-1589, 1980
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he codon CAG
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                    А.Н.
                                                                                                                                                                                                                                                                                                                                                                                                                                                          amino acid sequence
                                                  PIDN: AAA52041.1; PID: 9180816
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PIDN: AAB35615.1;
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for residue 154 
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                                                                                                                                                                                                                                                                                   B.; Ramirez,
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                                                                                                                                                                                                                          donor site causes skipping
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as His
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                                                                                                                                                                                                                             of.
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A; Molecule type: mRNA
A; Residues: 861-1015 <COL>
A; Cross-references: GB: J05617; GB: M55603; GB: M59227; NID: g180878;
A; Note: a mutant sequence with 942-977 spliced out from a patient Nankoo, B.S.; Dalgleish, R.
R; Mankoo, B.S.; Dalgleish, R.
Nucleic Acids Res. 16, 2337, 1988
A; Title: Human pro alphal(III) collagen: cDNA sequence for the 3' (A; Reference number: S02119; MUID: 88189827
A; Accession: S02119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Molecule type: mRNA
A; Residues: 1161-1200 <MIS>
A; Residues: 1161-1200 <MIS>
A; Cross-references: GB: M13146; NID: g180415; PIDN: AAA52003.1;
R: Emanuel, B.S.; Cannizzaro, L.A.; Seyer, J.M.; Myers, J.C.
Proc. Natl. Acad. Sci. U.S.A. 82, 3385-3389, 1985
A; Title: Human alpha 1(III) and alpha 2(V) procollagen genes
A; Reference number: 159025; MUID: 85216505
A; Accession: 179359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Molecule type: mRNA
A;Residues: 1065-1155, 'P',1157-1466 <LOI>
A;Residues: 1065-1155, EMBL:X01655; EMBL:X01742; NID:g29584; PIDN:CAA25821.1
A;Cross-references: EMBL:X01655; EMBL:X01742; NID:g29584; PIDN:CAA25821.1
R;Miskulin, M.; Dalgleish, R.; Kluve-Beckerman, B.; Rennard, S.I.; Tolstos
Biochemistry 25, 1408-1413, 1986
A;Title: Human type III collage gene expression is coordinately modulated
A;Reference number: 152393; MUID:86187804
A;Accession: 152393
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A; Residues: 950-1018, Y', 1020-1183, 'S', 1185-1466 <MAN>
A; Cross-references: EMBL: X06700; NID: g30053; PIDN: CAA29886.1;
R; Seyer, J.M.; Kang, A.H.
Biochemistry 20, 2621-2627, 1981
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A;Accession: A90438
C; Genetics:
A; Gene: GDB
                                                                                                                                                                                                                                               A; Molecule type: DNA
A; Residues: 1176-1240,'V',1242-1356,'P',1358-1466 <CHU>
A; Cross-references: GB:M10615; GB:M10793; GB:M10794; GB:M10795;
                                                                                                                                                                                                                                                                                                                                                                               J. Biol. Chem. 260, 4357-4363, 1985
A;Title: Isolation of cDNA and genom
A;Reference number: A92516; MUID:851
A;Accession: A92516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    R;Loidl, H.R.; Brinker, J.M.; May, M.; Pihlajaniemi, T.; Morrow, S.; Rosenbloom, J.; Myenucleic Acids Res. 12, 9383-9394, 1984
A;Title: Molecular cloning and carboxyl-propeptide analysis of human type III procollage A;Reference number: A93551; MUID:85087944
A;Accession: A93551
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A; Residues: 965-979, 'A', 981-984, 'PS', 987, 'QN', 990-1096, 'P', 1098-1152, 'AT', 1155, 'S'
A; Experimental source: liver

A; Experimental source: liver
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A; Accession: A90446
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A;Title: A base substitution at a splice site in the COL3Al gene causes exon skipping A;Reference number: A38303; MUID:91009133
A;Accession: A38303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Cross-references: GB:M11134; NID:g180417; PIDN:AAA52004.1; R;Chu, M.L.; Weil, D.; de Wet, W.; Bernard, M.; Sippola, M.;
                                                                                                                                                                                           A; Note:
                                                                                                                                                                                                                                   A; Experimental source: liver
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Molecule type: mRNA
A; Residues: 1165-1196 <EMA>
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A; Residues: 728-895, 'A', 897-964 <SEY4>
                                                               3-hydroxylated. About 15% of the lysines are 5-hydroxylated and some are subsequently
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Status:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Status: translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Status: translation not shown
                                                                                                                                                                                       the authors translated the codon TTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                          and genomic clones encoding MUID: 85157600
                                                                                                                                                                                   for residue
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                                                                                                                                                                                                                                                                                                                                                                                                                                                          human
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Ramirez, F.
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                                                                                                                                                                                                                                                               GB:M10796;
                                                                                                                                                                                   Tyr; the codons
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Tolstoshev, P.;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                          R;Li, K.H.; Sawamura, D.; Giudice, G.J.; Diaz, L.A.; J. Biol. Chem. 266, 24064-24069, 1991
A;Title: Genomic organization of collagenous domains A;Reference number: I55345; MUID:92084712
A;Accession: I55345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           F;1197-1221/Region: carboxyl-terminal nonhelical telopeptide
F;1222-1466/Domain: carboxyl-terminal propeptide #status predicted <CPR>
F;1238-1466/Domain: fibrillar collagen carboxyl-terminal homology <FCC>
F;24/Modified site: pyrrolidone carboxylic acid (Gln) (in mature form) #status predicted
F;153-154/Cleavage site: Pro-Gln (procollagen N-endopeptidase) #status predicted
F;154/Modified site: pyrrolidone carboxylic acid (Gln) (in mature form) #status predicted
F;161,1212/Modified site: allysine (Lys) #status predicted
F;263,284,860,977,1106/Modified site: 5-hydroxylysine (Lys) #status experimental
F;263/Binding site: carbohydrate (Lys) (covalent) #status experimental
F;364-949/Cleavage site: Gly-Ile (collagenase) #status experimental
F;948-949/Cleavage site: carbohydrate (Lys) (covalent) #status experimental
F;948-949/Cleavage site: Gly-Ile (collagenase) #status experimental
                                                                                                                                   A; Molecule type: mRNA , A; Molecule type: mRNA , Residues: 543-890, 'p' <RE2> A; Cross-references: GB:M63730; NID:g179520; PIDN:AAA51839.1; R; Giudice, G.J.; Squiquera, H.L.; Elias, P.M.; Diaz, L.A. J. Clin. Invest. 87, 734-738, 1991 A; Title: Identification of two collagen domains within the bu A; Reference number: A61262; MUID:91123476 A; Accession: A61262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C:Species: Homo sapiens (man)
C:Date: 12-May-1994 #sequence_revision 12-Jul-1996 #
C:Accession: 156325; I55345; A61262
R:Giudice, G.J.; Emery, D.J.; Diaz, L.A.
J. Invest. Dermatol. 99, 243-250, 1992
A:Title: Cloning and primary structural analysis of A:Reference number: I56325; MUID:92381323
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F;24-153/Domain: amino-terminal propeptide #status predicted <PRO>
F;31-91/Domain: von Willebrand factor type C repeat homology <VWC>
F;154-121/Product: collagen alpha 1(III) chain #status predicted <MAT>
F;154-167/Region: amino-terminal nonhelical telopeptide
F;154-167/Region: amino-terminal nonhelical telopeptide
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A;Map position: 2q31-2q31

A;Introns: 27/1; 94/3; 111/3; 149/3; 176/3; 554/3; 587/3; 1175/3; 1275/1; 1337/3; 141

A;Introns: the list of introns is incomplete; defects in this gene can result in Ehlers-C;Complex: type III collagen is a homotrimer of monomers initially linked by disulfider of their length, is formed with desmosine cross-links made from lysine and allysin
                               A; Residues:
C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Status: preliminary; translated
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Molecule type: mRNA
A; Residues: 1-1532 < RES>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             collagen alpha 1(XVII) chain – human (fragment) N; Alternate names: bullous pemphigoid 180K autoantigen BPAG2; bullous pemphigoid
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F;1091-1093/Region: cell attachment (R-G-D) motif
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C; Function:
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78.6%;
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Pred. No. 0.
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DB 1; 0.57;

Length 1466

0;

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#text_change 21-Jul-2000

the

Bullous

pemphigoid autoantige

and

chromosomal assignment of hu

PID:g179517 M.G.; Chu,

Chu, M.L.; Uitto,

bullous pemphigoid

autoant

PID:g179521

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A:Status: preliminary; not compared with conceptual translation
A:Molecule type: nucleic acid
A:Molecule type: nucleic acid
A:Residues: 1-1752 <EXP>
A:Note: sequence extracted from NCBI backbone (NCBIP:126841)
A:Residues: 1-1752 <EXP>
A:Note: sequence extracted from NCBI backbone (NCBIP:126841)
A:Residues: Acid: 72, 1991
A:Title: Primary mesenchyme cells of the sea urchin embryo require an autonomously produ
A:Reference number: A43903; MUID:92038439
A:Reference number: A43903; MUID:92038439
A:Status: preliminary
A:Molecule type: mRNA
A:Residues: 'P'.633-1537,'G' <WES>
A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          collagen alpha 3(IV) chain - sea urchin (Strongylocentrotus purpuratus)
C;Species: Strongylocentrotus purpuratus (purple urchin)
C;Date: 22-Sep-1993 *sequence_revision 18-Nov-1994 *text_change 13-Aug-1999
C;Accession: A45407; A43903; A23940
R;Exposito, J.Y.; D'Alessio, M.; Di Liberto, M.; Ramirez, F.
J. Biol. Chem. 268, 5249-5254, 1993
A;Title: Complete primary structure of a sea urchin type IV collagen alpha chain and A;Reference number: A45407; MUID: 33186842
A;Accession: A45407
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C;Date: 20-Sep-1999 #sequence_revision 20-Sep-1999 #text_change 17-Nov-2000
C;Accession: T13990
C;Accession: T13990
R;Yasothornsrikul, S.; Davis, W.J.; Cramer, G.; Kimbrell, D.A.; Dearolf, C.R. submitted to the EMBL Data Library, July 1996
A;Description: Viking: identification and characterization of a novel type IV
A;Reference number: Z17845
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C;Species: Drosophila melanogaster
C;Date: 20-Sep-1999 #sequence_revision 20-Sep-1999 #text_change 17-Nov-2000
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C:Superfamily: collagen alpha 1(IV) chain
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A;Map position: 10q24.3-10q24.3
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Residues: 1-1761 <YAS>
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Pred. No. 0.68;
2; Mismatches
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A;Cross-references: EMBL:M13206
C;Superfamily: collagen alpha 1(IV) chain
C;Keywords: colled coil; extracellular matrix; glycoprotein; trimer; triple helix
F;29-161/Domain: amino-terminal nonhelical, 7S <7SD>
F;162-1523/Region: interrupted helical
F;1524-1752/Domain: carboxyl-terminal nonhelical, NCl <NCl>
F;1534-163/Domain: collagen IV carboxyl-terminal repeat <CTl>
F;1544-1748/Domain: collagen IV carboxyl-terminal repeat <CTl>
F;1544-1748/Domain: collagen IV carboxyl-terminal repeat <CTl>
F;1529/Modified site: allysine (Lys) #status predicted
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A; Residues: 742-812 <VEN>
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CC31_MOUSE
CA10_HUMAN
YXWK_CAEEL
CONG_BOVIN
CA18_HUMAN
CA19_MOUSE
CA18_HUMAN
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COA5_BPPRD
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CA24_ASCSU
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MEDLINE-85003629; PubMed-6434307;

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MEDLINE-85003629; PubMed-6434307;

MEDLINE-85003629; PubMed-6434307;

MEDLINE-8500629; PubMed-6434307;

MEDLINE-85006

from the

SEQUENCE OF 1256-1669 FROM N.A.

J. Biochem.

143:545-556(1984).

basement membrane collagen (type IV) reveals 21 interruptions located within the collagenous don Eur. J. Biochem. 168:529-536(1987). [4] SEQUENCE OF 28-243. MEDITAR—86004708; PubMed-4043082; Glanville R,W., Qian R.Q., Siebold B., Risteli J. Amino acid sequence of the N-terminal aggregati region (7S domain) of the alpha 1 (IV) chain of membrane collagen."; Eur. J. Biochem. 152:213-219(1985).	lacenta; blacenta; blacenta; blacenta; blacenta; blacenta; clacenta; c	Homo Sapiens (Human). Eukaryota; Metazoa; Chordata; Craniata; Eukaryota; Metazoa; Chordata; Craniata; Mammalia; Eutheria; Primates; Catarrhini NCBI_TaxID=9606; [1] SEQUENCE FROM N.A. SEQUENCE FROM N.A. MEDLINE-8934043; PubMed=2701944; MEDLINE-8934043; PubMed=2701944; Soininen R., Huotari M., Ganguly A., Pro "Structural organization of the gene for type IV collagen."; J. Biol. Chem. 264:13565-13571(1989).	RESULT 1 CA14_HUMAN ID CA14_HUMAN ID CA14_HUMAN AC P02462; DT 21-JUL-1986 (Rel. 01, Created) DT 01-FEB-1996 (Rel. 33, Last sequence update) DT 01-OCT-2000 (Rel. 40, Last annotation update) DE COLLAGEN ALPHA 1(IV) CHAIN PRECURSOR.	1 CA6 1 CA2 1 CA2 1 CA2 1 CA2 1 CA2 1 CA2 1 CA3 1 CA3 1 CA3
reveals 21 non-triplet lagenous domain."; ., Risteli J., Kuehn K.; al aggregation and cross-li V) chain of human basement	J., Tryggvason K.; ha 1-chain of human ba	Verteb1; Homi	MENTS 1669 AA. update) n update)	AN 014031 homo sapien AN P13942 homo sapien EL P20630 caenorhabdi EL P20631 caenorhabdi CK P12108 gallus gall AN P25067 homo sapien CK P08125 gallus gall CK P08125 gallus gall CK P132017 gallus gall CK P32017 gallus gall CK P32017 gallus gall CH P34282 oryccolagus ME P08120 drosophila

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-!- SUBUNIT: THERE ARE SIX TYPE IV COLLAGEN ISOFORMS, ALPHA 1(IV)-ALPHA 6(IV), EACH OF WHICH CAN FORM A TRIPLE HELIX STRUCTURE WITH 2 OTHER CHAINS TO GENERATE TYPE IV COLLAGEN NETWORK.

-!- DOMAIN: ALPHA CHAINS TO TYPE IV COLLAGEN HAVE A NONCOLLAGENOUS DOMAIN (NC1) AT THEIR C-TERMINUS, FREQUENT INTERRUPTIONS OF THE G-X-Y REPEATS IN THE LONG CENTRAL TRIPLE-HELICAL DOMAIN (WHICH MAY CAUSE FLEXIBILITY IN THE TRIPLE HELIX), AND A SHORT N-TERMINAL TRIPLE-HELICAL TOMAIN (WHICH MAY CAUSE FLEXIBILITY IN THE TRIPLE HELIX), AND A SHORT N-TERMINAL TRIPLE-HELICAL 75 DOMAIN.

-!- PTM: LYSINES AT THE THIRD POSITION OF THE TRIPEPTIDE REPEATING UNIT ARE HYDROXYLATED IN ALL CASES AND BIND CARBOHYDRATE.

-!- PTM: TYPE IV COLLAGENS CONTAIN NUMEROUS CYSTEINE RESIDUES WHICH ARE INVOLVED IN INTER- AND INTRAMOLECULAR DISULFIDE BONDING. 12 OF THE SET INCOLAGENS IN THE NOTING ARE CONSERVED IN ALL KNOWN TYPE IV COLLAGENS IN THE MICH ARE INCOLAGEN IN THE NC1 DOMAIN, ARE CONSERVED IN ALL KNOWN TYPE
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of basement-membrane type IV collagen.";
Eur. J. Blochem. 176:617-624(1988).
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"The structural genes for alpha 1 and
collagen are divergently encoded on or
overlapping promoter region.";
J. Biol. Chem. 263:17217-17220(1988).
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halves of the carboxy1-terminal domain.";
J. Biol. Chem. 260:7681-7687(1985).
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Cheung M.-C., Prockop D.J., Boyd C.D.;
"cDNA clones coding for the pro-alphal(IV) chain of human type
"cDNA clones coding for the pro-alphal(IV) chain acid sequences
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MEDLINE-88112221; PubMed-3338568;
Wood L., Therlault N., Vogell G.;
"CDNA clones completing the nucleotide and sequence of the alpha 1 chain of basement measurement of the sequence of the seque
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15-JUL-1999 (Rel. 38, Last annotation update)
COLLAGEN ALPHA 1(IV) CHAIN PRECURSOR.
                                                                                                                                                                                                                                                                                                                                                                                Oberbaeumer I., Laurent M., Schwarz U., Sakurai Y., Yamada Y., Vogeli G., Voss T., Siebold B., Glanville R.W., Kuhn K.; "Amino acid sequence of the non-collagenous globular domain (NCl) of the alpha 1(IV) chain of basement membrane collagen as derived from complementary DNA.":
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Mammalia; Eutheria;
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                                "Head-to-head
J. Biol. Chem.
                                                              MEDLINE-89066738; PubMed-3198626; Kaytes P., Wood L., Theriault N.,
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                                                                                                                                         "Alpha 1 type IV collagen collagen genes.";
                                                                                                                                                                       Sakurai Y.,
                                                                                                                                                                                      MEDLINE-86196099;
                                                                                                                                                                                                                                   "Extensive homology between the carboxyl-terminal alpha 1(IV) and alpha 2(IV) collagen.";
J. Biol. Chem. 262:8496-8499(1987).
                                                                                                                                                                                                                                                                                               Kurkinen M., Condon M.R.,
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                                                                                                                                                                                                                                                                                                                                                                              complementary DNA.
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Sullivan M., Yamada Y
                                arrangement of murine type . 263:19274-19277(1988).
                                                                                                                            261:6654-6657(1986)
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PubMed=3597383;
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-!- SUBBUTE: THERE ARE SIX TYPE IV COLLAGEN ISOFORMS, ALPHA 1(IV)-
ALPHA 6(IV), EACH OF WHICH CAN FORM A TRIPLE HELIX STRUCTURE
WITH 2 OTHER CHAINS TO GENERATE TYPE IV COLLAGEN NETWORK.

-!- DOMAIN: ALPHA CHAINS OF TYPE IV COLLAGEN HAVE A CHOCOLLAGENOUS
DOMAIN (NC1) AT THEIR C-TERMINUS, FREQUENT INTERRUPTIONS OF THE
G-X-Y REPEATS IN THE LONG CENTRAL TRIPLE-HELICAL DOMAIN (WHICH MAY
CAUSE FLEXIBILITY IN THE TRIPLE HELIX), AND A SHORT N-TERMINAL
TRIPLE-HELICAL 75 DOMAIN.

-!- PTM: PROLINES AT THE THIRD POSITION OF THE TRIPEDTIDE REPEATING
UNIT (G-X-Y) ARE HYDROXYLATED IN SOME OR ALL OF THE CHAINS.
-!- PTM: TYPE IV COLLAGENS CONTAIN NUMEROUS CYSTESINE RESIDUES WHICH
ARE INVOLVED IN INTER- AND INTRAMOLECULAR DISULFIDE BONDING. 12 OF
THESE, LOCATED IN THE NC1 DOMAIN, ARE CONSERVED IN ALL KNOWN TYPE
                                                           This SWISS-PROT entry is copyright. It is produced through a collab between the Swiss Institute of Bioinformatics and the EMBL outst the European Bioinformatics Institute. There are no restrictions use by non-profit institutions as long as its content is in modified and this statement is not removed. Usage by and for commodified and this statement is not removed. Usage by and for commodified and this statement is not removed.
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Alpha 1(IV) and alpha 2(IV) collagen genes are regulated bidirectional promoter and a shared enhancer.";
Proc. Natl. Acad. Sci. U.S.A. 85:9679-9682(1988).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE OF 1-129 FROM N.A. MEDLINE-88243724; PubMed-3379041;
entities requires a license agreement (s or send an email to license@isb-sib.ch).
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                                     (See http://www.isb-sib.ch/announce/
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EMBL; J03758; AAA37439.1; -.
EMBL; M23333; AAA51625.1; -.
EMBL; M234333; AAA51625.1; -.
EMBL; X06777; CAA29946.1; -.
EMBL; X06777; CAA29946.1; -.
EMBL; M15832; AAA37340.1; -.
EMBL; M14042; AAA37342.1; -.
EMBL; M1879; AAA37343.1; -.
EMBL; M13024; -; NOT_ANNOTATED_CDS.
EMBL; M13024; -; NOT_ANNOTATED_CDS.
EMBL; M13025; -; AAA37344.1; -.
EMBL; M13027; AAA37344.1; -.
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EMBL; M13028; AAA37346.1; -.
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EMBL; M13028; AAA37346.1; -. Pfam; PF01413; C4; 2. Pfam; PF01391; Collagen; Extracellular matrix; Co PIR; A33525; CGMS4B.
MGD; MGI:88454; Col4a1.
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InterPro; IPR001442; -. ; Hydroxylation; (

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170 126 126 Connective tissue; Basement; Glycoprotein; Collagen; Sig Signal membrane

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COLLAGEN ALPHA 1(IV) CHAIN.
TRIPLE-HELICAL REGION (NC1).
OR 1548 (BY SIMILARITY).
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J. Biol. Chem. 267:12475-12481(1992).
MEDLINE=90160375;
Hostikka S.L., Ed
Tryggvason K.;
                                                                                                                  Pihlajaniemi T., Pohjolainen E.R., Myers J.C.; "Complete primary structure of the triple-helical region and the carboxyl-terminal domain of a new type IV collagen chain, alpha
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01-DEC-1992 (Rel. 24, Created)
01-FEB-1994 (Rel. 28, Last sequence update)
01-OCT-2000 (Rel. 40, Last annotation update)
COLLAGEN ALPHA 5(IV) CHAIN PRECURSOR.
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MEDLINE-91169491;
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Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
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                                                   MEDLINE-91169491; PubMed=2004755;
Zhou J., Hostikka S.L., Chow L.T., Tryggvason K.;
"Characterization of the 3' half of the human type
5 gene that is affected in the Alport syndrome.";
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the human type IV collagen
269:6608-6614(1994).
       Eddy R.L., Byers
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VARIANTS AS E-400;V-406;V-638;A-638;R-653;R-796;R-869;R-872 & C-1241. MEDLINE=95322976; PubMed=7599631; Boye E., Flinter F., Zhou J., Tryggvason K., Bobrow M., Harris A.; "Detection of 12 novel mutations in the collagenous domain of the
                                                                                                              Tryggvason
                                                                                                                          MEDLINE=94010948; PubMed=8406498; Lemmink H.L., Schroeder C.H., Bru
                                                                                                                                                                                        glutamic
                                                            van Oost B.A., Smeets H.J.M.;
"Identification of four novel mutations
patients with Alport syndrome.";
Genomics 17:485-489(1993).
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Rizzoni G., de Marchi M.;
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"Substitution of arginine for glycine 325 in the collagen alpha 5
(IV) chain associated with X-linked Alport syndrome: characterization the mutation by direct sequencing of PCR-amplified lymphoblast
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"Differential splicing of COL4A5
cells: a complex mutation in the
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Natl. Acad. Sci. U.S.A. 87:1806-1810(1990).
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**Detection of mutations in COL4A5 in patients with Alport syndrom Hum. Mutat. 13:124-132(1999).

-1- FUNCTION: TYPE IV COLLAGEN IS THE MAJOR STRUCTURAL COMPONENT GLOMERULAR BASEMENT MEMBRANES (GBM), FORMING A 'CHICKEN-WIRE'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Krasnopolskaya X., Evgrafov O.; "Substitution of A198D in noncollagen domain of a5(IV) collichain associated with adult-onset X-linked Alport syndrome." Hum. Mutat. 7:149-150(1996).
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Trivelli A., Pinciaroli A.R., Ragaiolo
"Missense mutations in the COL4A5 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VARIANTS AS R-174; R-177; R-325; MEDLINE-98112435; Pubmed-9452056; Ner1 T.M., Zanelli P., de Palma G. Pignatti G.F., Galli L., Bruttini
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Turco A., Heiskari N., Zhou J., Gusmano R., M
Scolari F., Sessa A., Rizzoni G., Tryggvason
Savi M., Ballabio A., de Marchi M.;
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Denison J.C., Fain P.R., Gregory With tardive
"A mutation causing Alport syndrome with tardive
common in the western United States.";
Am J. Hum, Genet. 58:1157-1165(1996).
  <u>:</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VARIANTS AS, AND VARIANTS.
MEDLINE=99140256; Pubmed=10094548;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Alport
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WARIANT AS GLN-1677
MEDLINE-97295089; P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Tverskaya S., Bobrynina V.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "X-linked Alport syndrome: an SSCP-based mutation survey over all exons of the COL4A5 gene.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE-96213754;
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                     THESE,
                                                                                                                                                  TRIPLE-HELIX DOMAIN ARE INTRODUCED.

DOMAIN: ALPHA CHAINS OF TYPE IV COLLAGEN HAVE A NONCOLLAGENOUS DOMAIN (NC1) AT THEIR C-TERMINUS, FREQUENT INTERRUPTIONS OF THE G-X-Y REPEATS IN THE LONG CENTRAL TRIPLE-HELICAL DOMAIN (WHICH CAUSE FLEXIBILITY IN THE TRIPLE HELIX), AND A SHORT N-TERMINAL TRIPLE-HELICAL 75 DOMAIN.
                                                               UNIT (G-X-Y) ARE HYDROXYLATED IN SOME OR ALL OF THE CHAIN: PTM: TYPE IV COLLAGENS CONTAIN NUMEROUS CYSTEINE RESIDUES ARE INVOLVED IN INTER- AND INTRAMOLECULAR DISULFIDE BONDII
                                                                                                                                                                                                                                                                                                               ALTERNATIVE PRODUCTS: 2 ISOFORMS; 1 (SHOWN HERE) AND PROBABLY PRODUCED BY ALTERNATIVE SPLICING. ISOFORM 2
                                                                                                                                                                                                                                                                                                                                                            SUBUNIT: THERE ARE SIX TYPE IV COLLAGEN ISOFORMS, ALPHA 1(IV)-ALPHA 6(IV), EACH OF WHICH CAN FORM A TRIPLE HELIX STRUCTURE WITH 2 OTHER CHAINS TO GENERATE TYPE IV COLLAGEN NETWORK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A5 gene
Mutat.
                                                                                                                                  PTM: PROLINES AT THE THIRD POSITION OF THE TRIPEPTIDE REPEATING
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                                             LOCATED IN THE
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DEFECTS
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58:1192-1204(1996)
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COL4A5
                                             NC1 DOMAIN,
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ARE
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smano R., Massella L., Banfi G.,
ASSOCIATED
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     M., Rizzoni G.F., de Marchi M.; in patients with X-linked
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erican families
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Best Local :
                       This SWISS-PROT entry is copyright. It is produce the Swiss Institute of Bioinformatics the European Bioinformatics Institute. There as use by non-profit institutions as long as it modified and this statement is not removed. Use entitles requires a license agreement (See http or send an email to license@isb-sib.ch).
                                                                                                                                                                                            _CANFA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
STRAIN-SAMOYED; TISSUE-Kidney;
MEDLINE-94224868; PubMed-8171024;
                                                                                                                                                                                                                                                                                                                                                                                                                                       mutation in
IV.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Zheng
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Mammalia; Eutheria;
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15-JUL-1998
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IV COLLAGENS.

DISEASE: A DEFECT IN COL4A5 HAS BEEN FOUND TO BE THE CAUSE DISEASE: A DEFECT IN COL4A5 HAS BEEN FOUND TO BE THE CAUSE CANINE X-LINKED HEREDITARY NEPHRITIS (HN), A DISEASE SIMILA THAT IN HUMANS (ALSO REFERED TO AS ALPORT SYNDROME) CHARACT BY PROGRESSIVE RENAL FAILURE AND NEUROSENSORY DEAFNESS.

SIMILARITY: TO OTHER TYPE IV COLLAGENS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 GVKGDKGNPGWPGAP
                                                                                                                                                                                                                                                                                                                                                                                   FUNCTION: TYPE IV COLLAGEN IS THE MAJOR STRUCTURAL COMPONENT GLOMERULAR BASEMENT MEMBRANES (GBM), FORMING A 'CHICKEN-WIRE' MESHWORK TOGETHER WITH LAMININS, PROTEOGLYCANS AND ENTACTIN/
                                                                                                                                                                                                                                                                                                                                                             SUBUNIT: THERE ARE SIX TYPE IV COLLAGEN ISOFORMS, ALPHA 1(IV)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SYNDROME (AS). ALPORT SYNDROME IS CHARACTERIZED BY PROGRESSIVE GLOMEBULCONEPHRITIS, OFTEN ASSOCIATED WITH HIGH-TONE SENSORINEED DEAFNESS, SPECIFIC EYE ABNORMALITIES (LENTICONOUS AND MALCULAR FLECKS), AND GLOMERQULAR BASEMENT MEMBRANE DEFECTS. IN MALES, 1 TYPICAL TIME COURSE FOR THE PROGRESS OF ALPORT SYNDROME IS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                 x-linked hereditary nephritis resulting from a ion in the gene encoding the alpha 5 chain of cc
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7 (Rel. 35, Last s
8 (Rel. 36, Last a
LPHA 5(IV) CHAIN (
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Carnivora; Fissipedia;
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                                                                                                                                                                                                                             Schwarz U., Schuppan D., Oberbaeumer I., Glanville R.W., Schuppan D., Weehn K.;
Deutzmann R., Timpl R., Kuehn K.;
"Structure of mouse type IV collagen. Amino-acid sequence of the terminal 511-residue-long triple-helical segment of the alpha 2(1) chain and its comparison with the alpha 1(IV) chain.";
Eur. J. Biochem. 157:49-56(1986).
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01-FBE 1991 (Rel. 17, Last sequence update)
30-MAY-2000 (Rel. 39, Last annotation update)
COLLAGEN ALPHA 2(IV) CHAIN PRECURSOR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DOMAIN
DOMAIN
                                                         MEDIINE-87054581; PubMed-3780963; Schwarz-Magdolen U., Oberbaeumer I., Kuehn K.; Schwarz-Magdolen Sequence of the NC1 domain of the collagen IV and its comparison with alpha 1(IV).";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "The complete primary structure of mouse alpha Alignment with mouse alpha 1(IV) collagen."; J. Biol. Chem. 264:6318-6324(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE-89197933; PubMed-2703491;
Saus J., Quinones S., Mackrell A.,
Pihlajaniemi T., Kurkinen M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE=89066738; PubMed=3198626; Kaytes P., Wood L., Theriault N.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa;
Mammalia; Eutheria;
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Glycoprotein; Basement
                                                                                                                                                                                       SEQUENCE OF 1480-1707 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE=86220192; PubMed=3011432;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE OF 970-1480 FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "Head-to-head arrangement of murine t
J. Biol. Chem. 263:19274-19277(1988).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE OF 1-33 FROM N.A.
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PF01391; Collagen;
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OR 643 (BY SIMILARITY).
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ne type IV collagen ger
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P; P19972; 1KVD.
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; erPro; IPR000087; erPro; IPR001442; -

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NIDOGEN.

- I SUBUNIT: THERE ARE SIX TYPE IV COLLAGEN ISOFORMS, ALPHA 1(IV)-
ALPHA 6(IV), EACH OF WHICH CAN FORM A TRIPLE HELIX STRUCTURE
WITH 2 OTHER CHAINS TO GENERATE TYPE IV COLLAGEN NETWORK.

- I DOMAIN: ALPHA CHAINS OF TYPE IV COLLAGEN HAVE A NONCOLLAGENOUS
DOMAIN (NC1) AT THEIR C-TEMNIUS, FREQUENT INTERRUPTIONS OF THE
G-X-Y REPEATS IN THE ICONG CENTRAL TRIPLE-HELICAL DOMAIN (WHICH MAY
CAUSE FLEXIBILITY IN THE TRIPLE HELIX), AND A SHORT N-TERMINAL
TRIPLE-HELICAL 7S DOMAIN.

- I PTM: PROLINES AT THE THIRD POSITION OF THE TRIPLE-THE CHAINS.
- I PTM: TYPE IV COLLAGENS CONTAIN NUMEROUS CYSTEINE RESIDUES WHICH
ARE INVOLVED IN INTER- AND INTRAMOLECULAR DISULFIDE BONDING. 12 OF
THESE, LOCATED IN THE NC1 DOMAIN, ARE CONSERVED IN ALL KNOWN TYPE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Kurkinen M., Condon M.R., Blumberg B., Barlow D., Quinones S., Saus J., Pihlajaniemi T.; Saus J., Pihlajaniemi T.; "Extensive homology between the carboxyl-terminal peptides of mouse alpha 1(IV) and alpha 2(IV) collagen."; J. Biol. Chem. 262:8496-8499(1987).
                                                                                                                                                                                                                                                                                 EMBL;
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Vogeli G., Horn E
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"Proposed alignment of helical interruptions
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L; M2333; AAA51626.1; JU
L; M2333; AAA51626.1; JU
JUA695; AAA50293.1;
L; JUA448; AAA73738.1;
L; X04647; CAA28308.1;
L; M1833; AAA377341.1;
L; X04916; CAA27991.1;
L; X02896; CAA26655.1;
L; X02897; CAA26655.1;
L; X02898; CAA26657.1;
L; X02898; CAA26657.1;
JL; X02898; CAA26657.1;
JL; M23334; AAA51627.1;
A33326; A33526.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  IV COLLAGENS.
                                                                                                                                                                                                                                                                                                                                                                                                                               SWISS-PROT entry is copyright. It is produced through a collaboration en the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                                                                                                                                                                                                                                                                                     requires a license agreement (S an email to license@isb-sib.ch).
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                                                                                                                                                                                                    Brazel D., Pollner R., Oberbaeumer I., Kuehn K.;
"Human basement membrane collagen (type IV). The amino acid sequence
of the alpha 2(IV) chain and its comparison with the alpha 1(IV)
chain reveals deletions in the alpha 1(IV) chain.";
Eur. J. Blochem. 172:35-42(1988).
                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE-89066769; PubMed-3198637;
Hostikka S.L., Tryggvason K.;
"The complete primary structure of the alpha collagen and comparison with the alpha 1(IV)
J. Biol. Chem. 263:19488-19493(1988).
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DOMAIN
                     Hostikka S.L., Kurkinen M., Tryggvason K.;
"Nucleotide sequence coding for the human type IV collagen alpha chain cDNA reveals extensive homology with the NC-1 domain of ali (IV) but not with the collagenous domain or 3'-untranslated region.
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01-FEB-1991 (Rel. 17, Last sequence u
01-CCT-2000 (Rel. 40, Last annotation
COLLAGEN ALPHA 2(IV) CHAIN PRECURSOR.
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Mammalia; Eutheria;
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but not with the collagenous domain Lett. 216:281-286(1987).
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66.7%;
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E (IN REF. 6)
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of basement-membrane type IV collagen.";
Eur. J. Biochem. 176:617-624 (1988).
-1- FUNCTION: TYPE IV COLLAGEN IS THE MAJOR STRUCTURAL COMPONENT GLOMERULAR BASEMENT MEMBRANES (GBM), FORMING A 'CHICKEN-WIRE' MESHWORK TOGETHER WITH LAMININS, PROTEOGLYCANS AND ENTACTIN/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Siebold B., Deutzmann R., Kuehn K.;
"The arrangement of intra- and intermolecular carboxyterminal, non-collagenous aggregation e
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                collagen are divergently encoded on coverlapping promoter region.";
J. Biol. Chem. 263:17217-17220(1988).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               region of human collagen type IV divergent transcription.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE=93305049; PubMed=8317999;
Fischer G., Schmidt C., Opitz J., Cully Z., Kuehn K., Poeschl E.;
"Identification of a novel sequence element in the common promoter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        separated by a bidirectional promoter EMBO J. 7:2687-2695(1988).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDIINE-87250571; PubMed-2439508;
Myers J.C., Howard P.S., Jelen A.M., Dion A.S.,
"Duplication of type IV collagen COOH-terminal
specific expression of alpha 1(IV) and alpha 2,
                                                                                                                                                                                                                                                                                                                                  +
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SEQUENCE OF 1451-1485 FROM
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                                                                                                                                              ALPHA 6(IV), EACH OF WHICH CAN FORM A TRIPLE HELIX STRUCTURE WITH 2 OTHER CHAINS TO GENERATE TYPE IV COLLAGEN NETWORK.

DOMAIN: ALPHA CHAINS OF TYPE IV COLLAGEN HAVE A NONCOLLAGENOUS DOMAIN (NC1) AT THEIR C-TERMINUS, FREQUENT INTERRUPTIONS OF THE G-X-Y REPEATS IN THE LONG CENTRAL TRIPLE-HELICAL DOMAIN (WHICH N CAUSE FLEXIBILITY IN THE TRIPLE HELIX), AND A SHORT N-TERMINAL TRIPLE-HELICAL 75 DOMAIN.
                                               PTM: PROLINES AT THE THIRD POSITION OF THE TRIPEPTIDE REPUNIT (G-X-Y) ARE HYDROXYNATED IN SOME OR ALL OF THE CHAINS PTM: TYPE IV COLLAGENS CONTAIN NUMEROUS CYSTEIME RESIDUES ARE INVOLVED IN INTER- AND INTRAMOLECULAR DISULFIDE BONDIN
                                                                                                                                                                                                                                                                                                        SUBUNIT: THERE ARE SIX TYPE IV COLLAGEN ISOFORMS, ALPHA 6(IV), EACH OF WHICH CAN FORM A TRIPLE HELI
                                                                                                                                                                                                                                                                                                                                                               NIDOGEN.
IV COLLAGENS.
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                             LOCATED IN THE
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                          - AND INTRAMOLECULAR DISULFIDE BONDING. 12 OF NC1 DOMAIN, ARE CONSERVED IN ALL KNOWN TYPE
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alpha 2 chains
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2(IV) collagen
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Best Local Similarity
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Christiano A.M., Rosenbaum L.M.,
Christiano T.C., Zhang R.
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Q02388; Q14054; Q16507;

Q1-JUN-1994 (Rel. 29, Created)

Q1-FEB-1996 (Rel. 33, Last sequence update)

Q1-OCT-2000 (Rel. 40, Last annotation update)

COLLAGEN ALPHA 1(VII) CHAIN PRECURSOR (LONG-CHAIN COLLAGEN)-(LC
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                                                MEDLINE=94327588; PubMed=8051117; Christiano A.M., Greenspan D.S., Lee S., Uitto J.; Christiano A.M., Greenspan D.S., Lee S., Uitto J.; "Cloning of human type VII collagen. Complete primary sequence of alpha 1(VII) chain and identification of intragenic polymorphisms. J. Biol. Chem. 269:20256-20262(1994).
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Mammalia; Eutheria;
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X05610; CAA29098.1;

J02760; AAA58422.1;

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X12784; CAA31275.1;

J04217; AAA53097.1;
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PF01391; Collagen;
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93338437; PubMed=1307247;
                                                                                                             Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Eutheria; Primates; Catarrhini; Hominidae; Homo.
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A -> I (IN REF. 2)
M -> I (IN REF. 5)
G -> H (IN REF. 9)
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Cook M.E., Wright J., Briggaman R.A., Hunt S.W. III;
"Noncollagenous (NC1) domain of collagen VII resembles multidomain adhesion proteins involved in tissue-specific organization of extracellular matrix.";
J. Invost
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MEDLINE=94224777; PubMed-8170945;

Christiano A.M., Ryynaenen M., Uitto J.;

"Dominant dystrophic epidermolysis bullosa: i
Gly-->Ser substitution in the triple-helical
                                                        MEDLINE-96081220;
Christiano A.M., I
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MEDLINE-93291877; PubMed-8513326;
Christiano A.M., Greenspan D.S.,
Lin A.N., Dietz H.C., Hovnanian A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Jaervikallio A., Pulkkinen L., Uitto J.;
"Molecular basis of dystrophic epidermolysis
the type VII collagen gene (COLTAI).";
Hum. Mutat. 10:338-347(1997).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "The carboxy1-terminal half of type VII collagen, collagenous NC-2 domain and intron/exon organizati corresponding region of the COL7A1 gene."; Hum. Mol. Genet. 2:273-278(1993).
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the type III domains of fibronectin and the A domains of von
Willebrand factor.";
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"A missense mutation in type VII collagen in two
with recessive dystrophic epidermolysis bullosa."
Nat. Genet. 4:62-66(1993).
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Bauer E.A., Mattei M.-G., Chu M.-L., Uitto
"Human type VII collagen: cDNA cloning and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REVIEW ON DEB VARIANTS
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MEDLINE-96220218; PubMed-8644729;

Christiano A.M., McGrath J.A., Tan K.C., Uitto J.;

Christiano A.M., McGrath J.A., McGrath J.A., Uitto J.;

Christiano A.M., McGr
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Hovnanian A., Rochat A., Bodemer C., Petit E.,
Fraitag S., Christiano A.M., Uitto J., Lathrop
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"Influence of the second COL7A1 mutation in phanotypic severity of recessive dystrophic J. Invest. Dermatol. 106:766-770(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      genotype/phenotype correlation in a case severity."
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Shimizu H., McGrath J.A., Christiano A.M., Nishikawa T.,
"Molecular basis of recessive dystrophic epidermolysis by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ultto J., Pope F.M., Eady R.A.J.;
"Clificopathological correlations of compound heterozygous COL7A1 mutations in recessive dystrophic epidermolysis bullosa.";
J. Invest. Dermatol. 107:171-177(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VARIANT RDEB ARG-2
MEDLINE-96154068;
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MEDLINE-95164985; Pubn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        molecular mechanisms
formation.";
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VARIANTS RDEB W-1982; G-2008;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Dunnill M.G.S.,
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type VII collagen in a family with d
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helical domain
                     PIM: PROLINES AT THE THIRD POSITION OF THE TRIPEPTIDE REPEATING UNIT (G-X-Y) ARE HYDROXYLATED IN SOME OR ALL OF THE CHAINS.

DISEASE: DEFECT IN COLTAI IS A CAUSE OF RECESSIVE DYSTROPHIC EPIDERMOLYSIS BULLOSA (EB); A GROUP OF BLISTERING SKIN DISEASE CHARACTERIZED BY TISSUE SEPARATION WITHIN THE DERMAL-EPIDERMAL BASEMENT MEMBRANE ZONE. THE DYSTROPHIC TYPE, THE SCARRING FORM MANIFESTS THE CLEAVAGE WITHIN THE PAPILLARY DERMIS BELOW THE BASA LAMINA AT THE LEVEL OF THE ANCHORING FIBRILS. BOTH AUTOSOMAL DOMINANT AND RECESSIVE INHERITANCE PATTERNS HAVE BEEN RECOGNIZED DISEASE: EPIDERMOLYSIS BULLOSA ACQUISITA (EBA) IS AN AUTOIMMURE ACQUIRED BLISTERING SKIN DISEASE RESULTING FROM AUTOANTIBODIES TO
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FUNCTION: STRATIFIED SQUAMOUS EPITHELIAL BASEMENT MEMBRANE PROTEIN THAT FORM ANCHORING FIBRILS WHICH MAY CONTRIBUTE TO EPITHELIAL BASEMENT MEMBRANE ORGANIZATION AND ADHERENCE BY INTERACTING WITH
TYPE VII COLLAGEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SUBUNIT: HOMOTRIMER.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EXTRACELLULAR MATRIX (ECM) PROTEINS SUCH AS TYPE IV COLLAGEN.
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f type VII collagen.";
4:1579-1583(1995).
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DEFECT

IN COL7A1 IS A CAUSE OF DEB IS A BLISTERING SKIN

DYSTROPHIC DISEASES W

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Best Local
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Q01955;
01-OCT-1996
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              Goodpasture antigen (alpha 3(IV)NC1). Identifice antigenic region at the triple hellx/NC1 domain J. Biol. Chem. 267:19780-19784(1992).
                                                                                                                                                                                                                                 Mariyama M., Leinonen A., Mochizuki T., Tryggvason K., Reeders ("Complete primary structure of the human alpha 3(IV) collagen cloexpression of the alpha 3(IV) and alpha 4(IV) collagen chains
                                                         MEDLINE=93015826; PubMed=1400291;
Quinones S., Bernal D., Garcia-Sogo M., Elena S.F., Saus J.;
"Exon/intron structure of the human alpha 3(IV) gene encompa
                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa;
Mammalia; Eutheria;
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SIMILARITY: CONTAINS 1 PROTESS INTERPRETATION FOR INTERPRETATION FOR INTERPRETATION FOR INTERPRETATION FOR INTERPRETATION TYPE III-LIKE CAUTION: REF. 5 SEQUENCE DIFFERS FROM THAT SHOWN I
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEPARATION WHICH OCCURS BELOW THE DERMAL-EPIDERMAL BASEMENT MEMBRANE AT THE LEVEL OF THE ANCHORING FIBRILS. THE MOST SEVERE FORM OF RDEB IS THE HALLOPEAU-SIEMENS TYPE (HS-RDEB), A MILDER FORM IS THE MITIS TYPE (M-ROEB), AND THERE ARE STILL THE INVERSE, AND THE LOCALIZED TYPES. CLINICALLY, HS-RDEB MANIFESTS WITH MUTILATING SCARRING, WITH JOINT CONTRACTURES, CORNEAL EROSIONS, ESOPHAGUS STRUCTURES, AND PROPENSITY TO FORMATION OF CUTANEOUS SQUAMOUS CELL CARCINOMAS LEADING TO PREMATURE DEMISE OF THE AFFECTED INDIVIDUALS. M-RDEB SHOWS LIFELONG BLISTERING TENDENCY, MITH LIMITED SCARRING AND LESS FREQUENT EXTRACUTANEOUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MANIESTATIONS. HOMEVER THERE IS A CONTINUOM OF SEVERITY BETWEEN HS AND M-RDEB. THERE ARE SEVERAL TYPES OF DDEB: THE COCKAYNE-TOURAINE TYPE (CT-DDEB), THE PASINI TYPE (P-DDEB) WHICH IS SEVERE BARTH TYPE (B-DDEB) AND PRETIBIAL EPIDERMOLYSIS BULLOSA
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                                                                                                                                                                                                                       tissues.
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12; Conserv
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                                                                                                                                                                                                                                                                                                                                                      s (Human).
Metazoa; Chordata; C
Metazoa; Primates; (
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Pred. No. 0.19;
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                                                                                                         PARTIAL
                        \(\text{LPI is J(IV)}\) gene encompassing the
Identification of a potentially
NC1 domain junction.";
                                                                                                         SEQUENCE
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Lemmink H.H., MoChizuki T., van den Heuvel L.P.W.J., Schroeder C. Barrientos A., Monnens L.A.H., van Oost B.A., Brunner H.G., Reeders S.T., Smeets H.J.M.;

"Mutations in the type IV collagen alpha 3 (COL4A3) gene in autos recessive Alport syndrome.";

Hum. Mol. Genet. 3:1269-1273 (1994).

Hum. Mol. Genet. 3:1269-1273 (1994).

-!- FUNCTION: TYPE IV COLLAGEN IS THE MAJOR STRUCTURAL COMPONENT GLOMERULAR BASEMENT MEMBRANES (GBM), FORMING A 'CHICKEN-WIRE' MISSHWORK TOGETHER WITH LAMININS, PROTEOGLYCANS AND ENTACTIN/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE OF 1-29 FROM N.A.
MEDLINE-98196854; PubMed-9537506;
Momota R., Sugimoto M., Ochashi T., Kigasawa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Feng L., Xia Y., Wilson C.B.;
"Alternative splicing of the NC1 domain of the human alpha 3(IV)
collagen gene. Differential expression of mRNA transcripts that
predict three protein variants with distinct carboxyl regions.";
J. Biol. Chem. 269:2342-2348(1994).
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MEDLINE-95078827;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              spliced."
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Submitted (JAN-1993) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TISSUE=Kidney;
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J. Clin. Invest. 89:592-601(1992).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE=93280184; PubMed=8505332;
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COCHLEA, LUNG AND BRAIN.

DOMAIN: ALPHA CHAINS OF TYPE IV CO
DOMAIN (NC1) AT THEIR C-TERMINUS,
G-X-Y REPEATS IN THE LONG CENTRAL
CAUSE FLEXIBILITY IN THE TRIPLE HE
TRIPLE-HELICAL 7S DOMAIN.
                                                                                                                                                                                                                                                              NIDOGEN.
SUBUNIT: THERE ARE SIX TYPE IV COLLAGEN ISOFORMS, ALPHA 1(IV)
ALPHA 6(IV), EACH OF WHICH CAN FORM A TRIPLE HELIX STRUCTURE
WITH 2 OTHER CHAIMS TO GENERATE TYPE IV COLLAGEN NETWORK.
                                                                                                                                                                   SUBCELLULAR LOCATION: CELL SURFACE (POTENTIAL)
ALTERNATIVE PRODUCTS: AT LEAST 3 ISOFORMS; 1 (
3/L5; ARE PRODUCED BY ALTERNATIVE SPLICING. TH
C-TERMINAL NC1 DOMAINS.
TISSUE SPECIFICITY: ALPHA 3 AND ALPHA 4 TYPE I
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J. Hum. Genet. 49:545-554(1991).
                                                                                                                                               COLOCALIZED AND PRESENT ONLY IN
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89:592-601(1992).
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                                                                                                                                                  BASEMENT
                             HELIX),
                                                                                                  COLLAGEN
                                                 OLLAGEN HAVE A NONCOLLAGENOUS FREQUENT INTERRUPTIONS OF THE TRIPLE-HELICAL DOMAIN (WHICH MAY
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EMBL; X80031; CAA56335.1;

EMBL; M92993; AAA21610.1;

EMBL; S55790; AAB19637.1;

EMBL; M81379; AAA51556.1;

EMBL; L08650; AAA52044.1;

EMBL; U02519; AAA18942.1;

EMBL; U02520; AAA18943.1;
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InterPro; IPR001442; ...
Pfam; PF01413; C4; 2...
Pfam; PF01391; C0llagen; 21.
Extracellular matrix; Connective tissue; Repeat; Hydroxylation; Extracellular matrix; Connective tollagen; Signal; Cell adhesion (Signoprotein; Basement membrane; Collagen; Signal; Cell adhesion (Signoprotein; Basement membrane; Phosphorylation.
Alternative splicing; Polymorphism; Phosphorylation.
Alternative splicing; Polymorphism; Phosphorylation.
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the European Bioinformatics Institute
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTOSOMAL RECESSIVE FORM OF ALPORT SYNDROME, AN HEREDITARY GLOMERULONEPHROPATHY CHARACTERIZED BY PROGRESSIVE RENAL FA HEMATURIA AND DEAFNESS. THE RECESSIVE FORM OCCURS EQUALLY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DISEASE: ANTIBODIES AGAINST THE NC1 DOMAIN OF ALPHA3(IV. THE HUMAN AUTOIMMUNE DISEASE, GOODPASTURE SYNDROME, WHIC CHARACTERIZED BY HEMATURIA AND PULMONARY HEMORRHAGE. DISEASE: DEFECTS IN COL4A3 ARE ASSOCIATED WITH THE TYPE
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PTM: TYPE IV COLLAGENS CONTAIN NUMEROUS CYSTEINE RESIDUES WHICH ARE INVOLVED IN INTER- AND INTRAMOLECULAR DISULFIDE BONDING. 12 OF THESE, LOCATED IN THE NC1 DOMAIN, ARE CONSERVED IN ALL KNOWN TYPE
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CELL ATTACHMENT SITE (POTENTIAL).

N-LINKED (GLCNAC. .) (POTENTIAL).

PHOSPHORYLATION (BY SIMILARITY).

PHOSPHORYLATION (BY SIMILARITY).

OR 1548 (BY SIMILARITY).

OR 1551 (BY SIMILARITY).

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OR 1665 (BY SIMILARITY).

OR 1665 (BY SIMILARITY).

BY SIMILARITY.
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KRH -> KAYSINCESWGIRKNNKSLSGVHEEKTLKLKKTA
ELVFFILKNKVMTEHAVI (IN ISOFORM 2).
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                                                                             the European Bioinformatics Institute. There are no restrictions use by non-profit institutions as long as its content is in modified and this statement is not removed. Usage by and for con
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                                                                                                                                                                                                                   Bamford D.H., Bamford J.K.H.; "Collagenous proteins multiply."; Nature 344:497-497(1990).
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                                                                                                                                                                                                                                                                                                   Bamford J.K.H., Bamford D.H.
                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A., AND SEQUENCE OF MEDLINE-90320115; PubMed-2196741;
                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID=10658;
                                                                                                                                                                                                                                                                                                                                                       Bacteriophage PRD1.
                                                                                                                                                                                                                                                                                                                                                                                                                     COA5_BPPRD
                                                                                                                                 FUNCTION: THE SHOPT COLLAGEN-LIKE REGION IS PROPOSED TO ACT AS TRIMERIZATION SIGNAL LEADING TO THE FULFILLMENT OF THE SYMMETRY REQUIREMENT OF THE MINOR CAPSOMER.
SUBUNIT: THE PRDI VIRION IS COMPOSED OF AN ICOSAHEDRAL PROTEIN COAT, AN INNER PROTEIN-LIPID MEMBRANE, AND A DSDNA GENOME WHICH IS LOCATED INSIDE THE LIPID VESICLE. THE PROTEIN COAT CONSISTS MAINLY OF PROTEIN P3. THE MINOR PROTEIN P5 IS ALSO CONSIDERED T CONSTITUTE PART OF THE PROTEIN COAT.
SIMILARITY: CONTAINS A COLLAGENOUS DOMAIN.
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                 protein.
                                                                                                                                                                                                                                                                                                                                                                         CAPSID
                                                     an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                         177:445-451(1990)
                                                                                                       the Swiss Institute of Bioinformatics
                                                                                                                                                                                                                                                                                         proteins of bacteriophage PRD1, a bacterial virus with a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1539
1594
1663
1670
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                                                                                                                                                                                                                                                                                                                                                                       (Rel. 19, Created)
(Rel. 19, Last sequence update)
(Rel. 24, Last annotation update)
D PROTEIN (PROTEIN P5).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
-0
                                                                                                                                                                                                                                                                                                                                              viruses,
                                                                                                                                                                                                                                                                                                                                                                                                                      STANDARD;
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1594
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                                                                                                                                                                                                                                             PubMed-2320123;
121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              67.48;
66.78;
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                                                                                                                                                                                                                                                                                                                                             RNA stage; Tectiviridae; Tectivirus
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Pred.
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T -> A (IN REF. 4).
QV -> HL (IN AAA52044 AND R
4W; 9B95708AF399BEAE CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CPHGWISLWKGFSFIMFTSAGSEGTGQALASPGSCLEEFRA
SPFLECHGRGTCNYYSNSYSFWLASLNPERMFRKPIPSTVK
DOMAIN 1.
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                                                                                                                                                                                                                                                                                                                                                                                                                      339 AA.
                                                                      (See http://www.isb-sib.ch/announce/
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0.15;
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RESULT
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Best Local
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01-FEB-1995
01-OCT-2000
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DOMAIN
SEQUENCE
                                                               use by non-profit institutions as long modified and this statement is not removed. entitles requires a license agreement (See or send an email to license@isb-sib.ch).
                                                                                                                                                      This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -1- FUNCTION: THE NUMEROUS INTERRUPTIONS IN THE TRIPLE HELIX MAY MAKE
THIS MOLECULE EITHER ELASTIC OR FLEXIBLE.
-1- TISSUE SPECIFICITY: IN THE PLACENTA, WHERE IT IS FOUND IN THE
AMNION, A MEMBRANOUS TISSUE LINING THE AMNIOTIC CAVITY. WITHIN THE
AMNION, IT IS FOUND IN AN ACELLULAR, RELATIVELY DENSE LAYER OF A
COMPLEX NETWORK OF RETICULAR FIBERS. ALSO LOCATED TO A FIBROBLAST
LAYER BENEATH THIS DENSE LAYER. EXISTS IN TISSUES IN ASSOCIATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Proc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE-92335339; PubMed-1631157; Pan T.C., Zhang R.Z., Mattel M.-G., Timpl R., Chu M.-L.; Pan T.C., Zhang R.Z., Mattel M.-G., Timpl R., Chu M.-L.; "Cloning and chromosomal location of human alpha 1(XVI) collagen."; Proc. Natl. Acad. Sci. U.S.A. 89:6565-6569(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HUMAN
EMBL; M92642; AAA58427.1; -. EMBL; S57132; AAB25797.1; -.
                                                                                                                                                                                                                                                                                                                                                                                     ÷
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cysteine-containing non-collagenous J. Blochem. 112:856-863(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "Molecular cloning and partial characterization of a novel chain, alpha 1(XVI), consisting of repetitive collagenous
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COLLAGEN ALPHA 1(XVI)
COL16A1.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Yamaguchi N., Kimura S., McBride O.W., Hori H.,
Kanamori T., Yamakoshi H., Nagai Y.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE=93203161; PubMed=1284248;
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                                                                                                                                                                                                                                             WITH OTHER TYPES OF COLLAGEN.

DEVELOPMENTAL STAGE: TRANSIEMTLY BLEVATED EXPRESSION DURING
GESTATION, AND DECREASE AT TERM.

GESTATION, AND DECREASE AT TERM.

DOMAIN: THIS SEQUENCE DEFINES EIGHTEEN DIFFERENT DOMAINS, NINE
TRIPLE-HELICAL DOMAINS (COL9 TO COL1) AND TEN NONTRIPLE-HELICAL
DOMAINS (NC10 TO NC1).

DOMAINS (NC10 TO NC1).

DOMAINS (NC10 TO NC1).

SIMILARITY: BELONGS TO THE FAMILY OF FIBRIL OF THE CHAINS.
SIMILARITY: BELONGS TO THE FAMILY OF FIBRIL-ASSOCIATED COLLAGEN:
WITH INTERRUPTED HELICES (FACIT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GIKGDKGDPGAPG
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10; Conser
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(Rel. 31, Last sec
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letazoa; Chordata;
theria; Primates;
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76.9%;
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Last annotation
CHAIN PRECURSOR
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2; Mismatches
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1848CE77D08944F3
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0.046;
                                                                                                                                     as its content
                                                                                         http://www.isb-sib
                                                                                                            Usage
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S23810;

S23810

InterPro; IPR000087; -.
Pfam; PF01391; Collagen; 16.

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RESULT
CA44_HU
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Best Local S
Matches 11
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SIGNAL
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DOMAIN
                 (IV)
                          chain.
                                                 TISSUE=Kidney;
MEDLINE=95014445;
                                                                                              Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                        COL4A4
                                                                                                                                COLLAGEN ALPHA 4(IV)
                                                                                                                                        01-OCT-1996
01-OCT-2000
                                                                                                                                                         01-OCT-1996
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                                                                                                                                                                                    _HUMAN
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DOMAIN
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                                                                    SEQUENCE
[2]
                                                                                    NCBI_TaxID=9606;
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                                Leinonen A., Mariyama M., Mochizuki T., Tryggvason K., Reeders S.T. Complete primary structure of the human type IV collagen alpha 4(I
                                                                                                                                                                                                                    681
         Biol.
                                                                                                                                                                                                                                     _
               n. Comparison chains.";
                                                                                                                                                                                                                                     GVKGDKGNPGWPGAP
                                                                                                               sapiens
                                                                                                                                                                                                                    GQKGDAGNPGDPGTP
                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Signal
                                                                   FROM N.A.
                                                                                     ıs (Human).
Metazoa; Chordata; C
─~~horia; Primates; (
                                                                                                                                       (Rel. 34,
(Rel. 34,
(Rel. 40,
                                                                                                                                                                                                                                                                                                         1578
418
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1011
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973
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521
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738
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       269:26172-26177(1994)
                                                                                                                                                                           STANDARD;
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                       structure with struc
                                                  PubMed=7523402;
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420
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505
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722
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                                                                                                                                                                                                                                                             66.3%;
73.3%;
                                                                                                                                CHAIN
                                                                                                                                                                                                                                                                                                157692
                                                                                                                              Last sequence update)
Last annotation update)
CHAIN PRECURSOR.
                                                                                                                                                         Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Connective tissue;
                         structure
                                                                                                                                                                                                                                                                                             NONHELICAL REGION 2 (NC2).
TRIPLE-HELICAL REGION 1 (COL1)
WITH 2 IMPERFECTIONS.

NONHELICAL REGION 1 (NC1).
RDA -> GGR (IN REF. 2).
R -> P (IN REF. 2).
T -> P (IN REF. 2).
T -> P (IN REF. 2).
S -> P (IN REF. 2).
S -> P (IN REF. 2).
S -> P (IN REF. 2).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     POTENTIAL.
COLLAGEN ALPHA 1(XV.
                                                                                                                                                                                                                                                     ;
                                                                                                                                                                                                                                                             Score 61;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HTIW
                                                                                                                                                                                                                                                                                                                                                                                   HTIW
                                                                                                                                                                                                                                                                                                                                                                                                  NONHELICAL REGION 4 (NC4).
TRIPLE-HELICAL REGION 3 (CONNINCHELICAL REGION 3 (NC3).
                                                                                                                                                                                                                                                                                                                                                                                                                           TRIPLE-HELICAL REGION 4 (COL4) WITH 2 IMPERFECTIONS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NONHELICAL REGION 9 (N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COLLAGEN ALPHA 1(XVI) CHAIN.
NONHELICAL REGION 10 (NC10).
TRIPLE-HELICAL REGION 9 (COL
                                                                                                                                                                                                                                                                                                                                                                                                                                                     TRIPLE-HELICAL REGION WITH 3 IMPERFECTIONS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TRIPLE-HELICAL REGION WITH 1 IMPERFECTION.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HTIW
                                                                                                                                                                                                                                                                                                                                                                                                                                              NONHELICAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                            NONHELICAL REGION 6 (NC6).
TRIPLE-HELICAL REGION 5 (C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WITH 1 IMPERFECTION. NONHELICAL REGION 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TRIPLE-HELICAL REGION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NONHELICAL REGION 8 (NC8).
                                                                                           Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                           PRT;
                                                                                                                                                                                                                                                      Mismatches
                       he human type IV
                                                                                                                                                update)
                                                                                                                                                                           1690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IMPERFECTIONS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IMPERFECTION.
                                                                                                                                                                                                                                                                                                                                                                                   IMPERFECTIONS.
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0.21;
                                                                                                                                                                                                                                                                                                                                                                                                                                              REGION 5
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                                                                                                                                                                                                                                                                      Length 1603;
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ON 2 (COL2)
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                                                                                                                                                                                                                                                                                                                                                                                                          (COL3)
                        other alpha
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"Bening familial hematuria due to mutation alpha4 gene.";
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Boye E., Mollet G., Forestler L., Cohen-Solal L., Heidet L.,
Boye E., Mollet G., Forestler L., Cohen-Solal L., Heidet L.,
Cochat P., Gruenfeld J.-P., Palcoux J.-B., Gubler M.-C., Antignac
"Determination of the genomic structure of the COL4A4 gene and of
novel mutations causing autosomal recessive Alport syndrome.";
Am. J. Hum. Genet. 63:1329-1340(1998).
T. Hum. Genet. 63:1329-1340(1998).
T. FUNCTION: TYPE IV COLLAGEN IS THE MAJOR STRUCTURAL COMPONENT OF
GLOMERCIAR BASEMENT MEMBERANES (GBM), FORMING A 'CHICKEN WIRE'
MESHWORK TOGETHER WITH LAMININS, PROTEOGLYCANS AND ENTACTIN/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Smeets H.J., Reeders S.T.;
Smeets H.J., Reeders S.T.;
"Identification of mutations in the alpha 3(IV) and alpha
"Identification of mutations in the alpha 3(IV) and alpha
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sugimoto M., Oohashi "cDNA isolation and collagen chain.";
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Lemmink H.H., Schroeder C.H., Mon
"The clinical spectrum of type IV
Hum. Mutat. 9:477-499(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       alpha
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE OF 1407-1507 FROM N.A. MEDLINE-93054733; PubMed-1429714; Kamagata Y., Mattei M.-G., Ninomiya
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEBS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mochizuki T., Lemmink H.H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VARIANT AS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "Isolation and sequencing of cDNAs and genomic DNAs alpha 4 chain of basement membrane collagen type IV the gene to the distal long arm of human chromosome J. Biol. Chem. 267:23753-23758(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE=93374047;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /ARIANT BFH GLU-897
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Clin.
                                                                                                           COCHLEA, LUNG AND BRAIN.

DOMAIN: ALPHA CHAINS OF TYPE IV COLLAGEN HAVE A NONCOLLAGENOUS DOMAIN: ALPHA CHAINS OF THE FORTH THE LORD CENTRAL TRIPLE-HELICAL DOMAIN (WHICH I G-X-Y REPEATS IN THE LONG CENTRAL TRIPLE-HELICAL DOMAIN (WHICH I CAUSE FLEXIBILITY IN THE TRIPLE HELIX), AND A SHORT N-TERMINAL TRIPLE-HELICAL 7S DOMAIN.

PTM: PROLINES AT THE THIRD POSITION OF THE TRIPEPTIDE REPEATING UNIT (G-X-Y) ARE HYDROXYLATED IN SOME OR ALL OF THE CHAINS.

PTM: TYPE IV COLLAGENS CONTAIN NUMEROUS CYSTEINE RESIDUES WHICH ARE INVOLVED IN INTER-AND INTRAMOLECULAR DISULFIDE BONDING. 12
                                                                                                                                                                                                                                                                          NIDOGEN.
SUBUNIT: THERE ARE SIX TYPE IV COLLAGEN ISOFORMS, ALPHA 1 (
ALPHA 6(IV), EACH OF WHICH CAN FORM A TRIPLE HELIX STRUCTU
WITH 2 OTHER CHAINS TO GENERATE TYPE IV COLLAGEN NETWORK.
SUBCELLULAR LOCATION: CELL SURFACE (POTENTIAL).
TISSUE SPECIFICITY: ALPHA 3 AND ALPHA 4 TYPE IV COLLAGENS
COLOCALIZED AND PRESENT ONLY IN BASEMENT MEMBRANES OF KIDN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Y., Verellen-Dumoulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          genes in autosomal recessive et. 8:77-82(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OF.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PubMed=8365481;
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partial gene s
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n C., Chan B.
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IV collagen mutations.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     H., Matsuo N., I structure of the
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Schroeder C.
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H., Smeets H.J.
n of the type I
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e human a
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X STRUCTURE
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GLOMERULONEPHROPATHY CHARACTERIZED BY HEMATURIA AND DEAFNESS. THE RECESSIVE

COL4A4 ARE ASSOCIATED WITH THE TYPE II
FORM OF ALPORT SYNDROME (AS), AN HEREDITARY
Y CHARACTERIZED BY PROGRESSIVE RENAL FAILURE,
ESS. THE RECESSIVE FORM OCCURS EQUALLY BETWEE

BETWEEN

DISEASE: DEFECTS IN AUTOSOMAL RECESSIVE

THESE, LOCATE
IV COLLAGENS.

LOCATED IN THE

NC1 DOMAIN,

ARE

CONSERVED

IN ALL KNOWN

TYPE

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EMBL; D17391;
MIM; 120131; -
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CARBOHYD
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                                                                                                                                                                                                              VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pfam; PF01131; C4; 2.
Pfam; PF011391; Collagen; 20.
Pfam; PF011391; Collagen; 20.
Extracellular matrix; Connective tissue; Basement membrane; Repeat;
Extracellular matrix; Connective tissue; Basement membrane; Repeat;
                                                 VARIANT
                                                                                 VARIANT
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                                                                                                                                                                                                                                                                                                           VARIANT
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SIMILARITY: TO OTHER TYPE IV COLLAGENS.
                                                                                                               1030
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1480
1513
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1622
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1690
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CELL ATTACHMENT SITE (PO)
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OR 1569 (BY SIMILARITY).
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CELL ATTACHMENT SITE (POTENTIAL).
   P -> L (IN AS).
/FTId=VAR_008155
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G -> S (IN AS)
                                                                                                                                                                                                                           /FTId-VAR_008150
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                                 /FTId-VAR_008154
                                                               /FTId-VAR_001913
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SIMILARITY.
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Best Local
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_ASCSU
DOMAIN
DISULFID
                                 DOMAIN
DOMAIN
                                                             CHAIN
                                                                               SIGNAL
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CA24_ASCSU STANDARD; PRT; 1763 AA. P27393; P17409-1992 (Rel. 23, Created) 01-AUG-1992 (Rel. 23, Last sequence update) 30-MAY-2000 (Rel. 39, Last annotation update) COLLAGEN ALPHA 2(IV) CHAIN PRECURSOR.
                                                                                                                                                                      Pfam; PF01413; C4; 2.
Pfam; PF01391; Collagen; 23.
Hydroxylation; Connective ti
Alternative splicing; Glycop
                                                                                                                                                                                                                                                                                   EMBL; M67507; AAA18014.1;
PIR; S16366; S16366.
InterPro; IPR000087; -.
InterPro; IPR001442; -.
                                                                                                                                                                                                                                                                                                                                                                                                                         This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "The complete primary structure of a nematode alpha 2(IV) collagen and the partial structural organization of its gene.";

J. Biol. Chem. 266:16149-16156(1991).

-I- FUNCTION: COLLAGEN TYPE IV IS SPECIFIC FOR BASEMENT MEMBRANES.
-I- SUBUNIT: TRIMERS OF TWO ALPHA 1(IV) AND ONE ALPHA 2(IV) CHAIN.

TYPE IV COLLAGEN FORMS A MESH-LIKE NETWORK LINKED THROUGH
INTERMOLECULAR INTERACTIONS BETWEEN 7S DOMAINS AND BETWEEN NC1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A. MEDLINE-91340768; PubMed-1714907;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ascaris suum (Pig roundworm) (Ascaris lumbricoides).
Eukaryota; Metazoa; Nematoda; Chromadorea; Ascaridida; Ascaridoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID-6253;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ascarididae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pettitt J., Kingston I.B.;

    GVKGDKGNPGWPGAP

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ALTERNATIVE PRODUCTS: 2 ISOFORMS; I (SHOWN HERE) AND II; ARE PRODUCED BY ALTERNATIVE SPLICING.

DOMAIN: ALPHA CHAINS OF TYPE IV COLLAGEN HAVE A NONCOLLAGENOUS DOMAIN (NC1) AT THEIR C-TERMINUS, FREQUENT INTERRUPTIONS OF THE GAY. Y REPEATS IN THE LONG CENTRAL TRIPLE-HELICAL DOMAIN (HHICH M CAUSE FLEXIBILITY IN THE TRIPLE HELIX), AND A SHORT N-TERMINAL TRIPLE-HELICAL 7S DOMAIN.

TRIPLE-HELICAL 7S DOMAIN.

PTM: PROLINES AT THE THIRD POSITION OF THE TRIPLEPTIDE REPEATING UNIT (G-X-Y) ARE HYDROXYLATED IN SOME OR ALL OF THE CHAINS.

PTM: TYPE IV COLLAGENS CONTAIN NUMEROUS CYSTEINE RESIDUES WHICH ARE INVOLVED IN INTER- AND INTRAMOLECULAR DISULFIDE BONDING. 12 THESE, LOCATED IN THE NC1 DOMAIN, ARE CONSERVED IN ALL KNOWN TYPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IV COLLAGENS.
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9; Conserv
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1690 AA;
  1530
1548
                                                                                                                                                                   splicing;
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                                                                                                                                                                      Connective tissue; B
licing; Glycoprotein;
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POTENTIAL.

COLLAGEN ALPHA 2(IV) CHAIN.
7S DOMAIN.
TRIPLE-HELICAL REGION.
NONHELICAL REGION (NC1).
OR 1634 (BY SIMILARITY).
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Pred. No. 0.22;
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E1E72F283A72BAAE CRC64;
                                                                                                                                                                                                   Basement membrane;
                                                                                                                                                                   Signal.
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                                                                                                                                                                                                   Repeat; Collagen;
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ALL KNOWN TYPE
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Best Local S
Matches 11
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01-FEB-1994 (Rel. 28, Created)
01-FEB-1994 (Rel. 28, Last sequence up
15-JUL-1999 (Rel. 38, Last annotation
PULMONARY SURFACTANT-ASSOCIATED PROTE:
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InterPro; IPR000087; -. InterPro; IPR001304; -. Pfam; PF01391; Collagen
                                                          the European Bioinformatics Institute. The use by non-profit institutions as long modified and this statement is not removed. entities requires a license agreement (See or send an email to license@isb-sib.ch).
                                                                                                                This
                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa; Chordata; Crania
Mammalia; Eutheria; Cetartiodactyla;
                                                                                                                                                                                                                                                                                                                                                    Bos taurus (Bovine).
                                                                                                                                                                                                                                                                                                                                                                                                                         BOVIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE
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                            HSSP;
                                                                                                                                                                                                                                                                                MEDLINE=93170856;
                                                                                                                                                                                                                                                                                         TISSUE-Lung
                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.,
                                                                                                                                                                                                                                                                                                                           Bovidae;
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                                   S33603;
                                                                                                      SWISS-PROT entry is copyright: It is produced through a collaboratic sen the Swiss Institute of Bioinformatics and the EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                          GLPGMKGNPGLPGAP
                           P19999;
                                          x75911;
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1593
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1690
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126
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S33603.
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BY SIMILARITY.
OR 1749 (BY SIMILARITY).
OR 1752 (BY SIMILARITY).
BY SIMILARITY.
N-LINKED (GLCNAC. . .) (POTENTIAL).
O-LINKED (GLYCOSAMINOGLYCAN) (IN FORM II)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GEQGPRGPQGPPGPVPSTGAKGTIIGPEGAPGMKGEK ->
                                                                                                                                                                                                                                                                                                                                 Craniata; Vertebrata; Eŭteleostomi; actyla; Ruminantia; Pecora; Bovoidea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ISOFORM II)
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PROTEIN D PRECURSOR (SP-D) (PSP-D).
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                                                                   http://www.isb-sib.ch/announce/
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RESULT 14
CA44_RABIT
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Best Local
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                                                                                                                                                                                                                 Kamagata Y., Mattei M.-G., Ninomiya Y.;

"Isolation and sequencing of cDNAs and genomic DNAs encoding the alpha 4 chain of basement membrane collagen type IV and assignmen the gene to the distal long arm of human chromosome 2.";

J. Biol. Chem. 267:23753-23758(1992).

-I- FUNCTION: TYPE IV COLLAGEN IS THE MAJOR STRUCTURAL COMPONENT GLOMERULAR BASEMENT MEMBRANES (GBM), FORMING A 'CHICKEN-WIRE' MESHWORK TOGETHER WITH LAMININS, PROTEOGLYCANS AND ENTACTIN/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DISULFID
DISULFID
CARBOHYD
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MOD_RES
MOD_RES
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MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                             Oryctolagus cuniculus (Rabbit).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
30-MAY-2000 (Rel. 39, Last annotation updat
COLLAGEN ALPHA 4(IV) CHAIN (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DOMAIN
DOMAIN
                                                                                                                                       TISSUE=Corneal endothelium;
MEDLINE=93054733; PubMed=1429714;
                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                       COL4A4
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01-NOV-1997 (Rel.
30-MAY-2000 (Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CA44_RABIT P55787;
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PROSITE; PS00615; C_TYPE_LECTIN_1; 1.

PROSITE; PS50041; C_TYPE_LECTIN_2; 1.

Glycoprotein; Calcium; Surface film; Gaseous
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         157 GLKGERGAPGEPGAP 171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 GVKGDKGNPGWPGAP
                                                                SUBUNIT: THERE ARE SIX TYPE IV COLLAGEN ISOFORMS, ALPHA 1(IV)-ALPHA 6(IV), EACH OF WHICH CAN FORM A TRIPLE HELLX STRUCTURE WITH 2 OTHER CHAINS TO GENERATE TYPE IV COLLAGEN NETWORK.

SUBCELLULAR LOCATION: CELL SURFACE (POTENTIAL).

DOMAIN: ALPHA CHAINS OF TYPE IV COLLAGEN HAVE A NONCOLLAGENOUS DOMAIN (NC1) AT THEIR C-TERMINUS, FREQUENT INTERRUPTIONS OF THE G-X-Y REPEATS IN THE LONG CENTRAL TRIPLE-HELICAL DOMAIN (WHICH N CAUSE FLEXIBILITY IN THE TRIPLE HELIX), AND A SHORT N-TERMINAL TRIPLE-HELICAL 7S DOMAIN.

TRIPLE-HELICAL 7S DOMAIN.

PTM: PROLINES AT THE THIRD POSITION OF THE TRIPEPTIDE REPEATING THE TRIPLE THIRD POSITION OF THE TRIPEPTIDE REPEATING
UNIT (G-X-Y) ARE HYDROXYLATED IN SOME OR ALL OF THE CHAINS. PTM: TYPE IV COLLAGENS CONTAIN NUMEROUS CYSTEINE RESIDUES WHARE INVOLVED IN INTER- AND INTRAMOLECULAR DISULFIDE BONDING. THESE, LOCATED IN THE NC1 DOMAIN, ARE CONSERVED IN ALL KNOWN IV COLLAGENS.
                                                                                                                                                                                                        NIDOGEN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10;
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78
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171
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20
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COLLAGEN:
COLLAGEN:
COLLAGEN:
COLLAGEN:
COLLAGEN:
COTYPE LECTIN (Sh.
BY SIMILARITY.
BY SIMILARITY.

90 N-LINKED (GLCUAC. . .) (POTEN-
HYDROXYLATION (BY SIMILARITY).
HYDROXYLATION (BY SIMILARITY).
"ROXYLATION (BY SIMILARITY).
"ROXYLATION (BY SIMILARITY).
"TATION (BY SIMILARITY).
"72E3 CRC64;
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248
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                                                                                                                                                                                                                                                                                      assignment
                KNOWN
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                                          WHICH
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RESULT :
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Best Local Similarity
Matches 10; Conser
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01-JUN-1994
01-NOV-1995
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P13941;
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DOMAIN
DOMAIN
        mrnas by estradiol in the immature rat uterus.";
DNA 7:347-354 (1988).

-I- FUNCTION: COLLAGEN TYPE III OCCURS IN MOST SOFT CONNALONG MITH TYPE I COLLAGEN.

-I- SUBUNIT: TRIMERS OF IDENTICAL ALPHA 1(III) CHAINS. TINKED TO EACH OTHER BY INTERCHAIN DISULFIDE BONDS.
ALSO CROSS-LINKED VIA HYDROXYLYSINES.
                                                                                                                                                                    Glumoff V., Makelae J.K., Vuorio E., Glumoff V., Makelae J.K., Vuorio E., "Cloning of cDNA for rat pro alpha 1(III) collagen mRNA. expression patterns of type I and type III collagen and igenes in experimental granulation tissue.", Biochim. Biophys. Acta 1217:41-48(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        the European Bioinformatics Institute. There are no restrictions use by non-profit institutions as long as its content is in modified and this statement is not removed. Usage by and for con
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                                                                                                                                        SEQUENCE OF 308-482 FROM N.A. MEDLINE-88296083; PubMed-2456
                                                                                                                                                                                                                                          SEQUENCE FROM N.A. MEDLINE-94114571; PubMed-8286415;
                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                COLLAGEN ALPHA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Glycoprotein;
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                                                                                                                                                                                                                                                                               NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Extracellular
                                                                                                                           Frankel F.R., Hsu C.-Y.J.,
                                                                                                                                                                                                                                                                                                                    Rattus norvegicus (Rat).
                                                                                                    Regulation of alpha 2(I),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                interPro;
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                                                                                                               B., Mohn
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(Rel. 29, Last sequence update)
(Rel. 32, Last annotation update)
PHA 1(III) CHAIN (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
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                                                                                                 alpha 1(III), and alpha 2(V) collagen
                                                                                                                           Meyers J.C.,
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NONHELICAL REGION (NC1).
OR 499 (BY SIMILARITY).
OR 502 (BY SIMILARITY).
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OR 616 (BY SIMILARITY).
OR 619 (BY SIMILARITY).
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Sciurognathi;
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0.12;
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thi; Muridae; Murinae; Rat
OF THE
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adhesion.
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                                                              CONNECTIVE TISSUES
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                        THE CHAINS
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Best Local
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                "The covalent structure of calf skin type III collagen. acid sequence of the cyanogen bromide peptide alpha 1(II (positions 223-402).";
                                                                                                                                                                    SEQUENCE OF 1-242.
MEDLINE=80026026; PubMed=488906;
Fietzek P.P., Allmann H., Rauter
                                                                                                                                                                                                                                Eukaryota; Metazoa;
Mammalia; Eutheria;
Bovidae; Bovinae; Bo
                                                                                                                                                                                                                                                                                           20-MAR-1987 (Rel. 04, Created)
20-MAR-1987 (Rel. 04, Last sequence update)
15-JUL-1999 (Rel. 38, Last annotation updat
COLLAGEN ALPHA 1(III) CHAIN.
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PROPEP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           InterPro; IPR000087; ...
InterPro; IPR000085; ...
InterPro; IPR001007; ...
Pfam; PF01410; COLFI; 1.
Pfam; PF01391; Collagen; 6.
PROSITE; PS01208; VWFC; PARTIAL.
Extracellular matrix; Connective tissue; Repeat;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PIR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
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Hoppe-Seyler's
[3]
                                                                                                       "The covalent structure acid sequence of the ami (positions 1-222)."; Hoppe-Seyler's Z. Physic
                                                                                                                                                         Kuhn
                                                                                                                                                                                                                    NCBI_TaxID=9913;
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S41067; S41067.
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            Physiol. Chem. 360:821-832(1979)
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Pred. No.
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INTERCHAIN (BY SIMILARITY).
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RESULT 17
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"The covalent structure of calf skin type III collagen. VI.
acid sequence of the carboxyterminal cyanogen bromide pepti
1(III)CB9B (positions 928-1028).";
Hoppe-Seyler's Z. Physiol. Chem. 360:861-868(1979).
-i- FUNCTION: COLLAGEN TYPE III OCCURS IN MOST SOFT CONNECT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "The covalent structure of calf skin type III collagen. V. The amino acid sequence of the cyanogen bromide peptide alpha 1(III)CB9A (position 789-927).";
                                                                                                                                                                                                                                                                                                                           Glycoprotein;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bentz H., Fietzek P.P., Kuhn K.;
"The covalent structure of calf skin type III collagen. II amino acid sequence of the cyanogen bromide peptide alpha (positions 403-551).";
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                                                                          702 GVKGERGSPGGPGA 715
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SUBUNIT: TRIMERS OF IDENTICAL ALPHA 1(III) CHAINS.
LINKED TO EACH OTHER BY INTERCHAIN DISULFIDE BONDS.
ALSO CROSS-LINKED VIA HYDROXYLYSINES.
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                                                                                                GVKGDKGNPGWPGA
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1041
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                                                                                                                                                                                                                                                                                                                                                matrix; Connective tissue; Repeat; Hydroxylation;
              STANDARD;
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71.4%;
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Pred. No.
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HYDROXYLATION.
HYDROXYLATION.
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8; 8EEC33D1C66EC9A3 CRC64;
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             PRT;
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  REVISIONS.
Seyer J.M.
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01-JAN-1990
01-OCT-2000
                                                                                                        Molyneux K., Dalgleish R.;
"Human type III collagen 'variant' is a
Nucleic Acids Res. 16:11833-11833(1988)
                                                                                                                                                                                                    SEQUENCE OF 950-1466 FROM N.A. MEDLINE=88189827; PubMed=3357782; Mankoo B.S., Dalgleish R.;
                                                                                                                                                                                                                                                   MEDLINE=80198282; PubMed=6246925;
Seyer J.M., Mainardi C., Kang A.H.;
"Covalent structure of collagen: am
(III)-CB5 from type III collagen of
Biochemistry 19:1583-1589(1980).
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"Covalent structure of collagen:
bromide peptides from the amino-t
of human liver.";
           procollagen.";
Nucleic Acids Res.
                                  Rosenbloom J., Myers
"Molecular cloning ar
                                                         MEDLINE=85087944; PubMed=6096827; Loidl H.R., Brinker J.M., May M.,
                                                                                   SEQUENCE OF 1065-1466 FROM N.
                                                                                                                                            REVISION TO 1184. MEDLINE-89098346; PubMed-3211760;
                                                                                                                                                                                                                                                                                                               SEQUENCE OF 728-964.
                                                                                                                                                                                                                                                                                                                                                                       Seyer J.M., Kang A.H.
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                                                                                                                                                                                                                                                                                                                                                                                                                       Submitted
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MEDLINE=77134724; Pu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              chain of human type III procollagen. Differences in protein structure from type I procollagen and conservation of codon preferences."; Biochem. J. 260:509-516(1989).
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Mammalia; Eutheria;
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                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE=79000343;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE OF 149-1225 FROM N.A. MEDLINE=89386015; PubMed=2780304;
                                                                                                                                                                              "Human pro alpha 1(III) collagen: cDNA
Nucleic Acids Res. 16:2337–2337(1988).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Nucleic Acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ala-Kokko
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MEDLINE=89350838; PubMed=2764886;
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(Rel.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PubMed=557335
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             12:9383-9394(1984)
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amino-terminal segment of type III col
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of human liver.";
                                                         Pihlajaniemi T.,
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Wu Y., Ganguly A., Prockop D.J.;
"G to A polymorphism in exon 31 of the
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE-93293988; PubMed-8514866;
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Earley J.J., Zhuang J., Noerrgard O., Darling R.C., Abbott W.M.
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Majamaa K., Smullens S.N., Gatalica Z., Ferrell R.E., Jimenez
Jackson C.E., Michels V.V., Kaye M., Kuivaniemi H.;
"Sequencing of cDNA from 50 unain of type III procollagen are an
inthe triple-helical domain of type III procollagen are an
infrequent cause of aortic aneurysms.";
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MEDLINE-86187804; PubMed-3754462;
MISKULIN M., Dalgleish R., Kluve-Beckerman B., Rennard S.I.,
Tolstoshev P., Brantly M., Crystal R.G.;
"Human type III collagen gene expression is coordinately modulated with the type I collagen genes during fibroblast growth.";
Blochemistry 25:1408-1413(1986).
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"Mutations in fibrillar collagens (types I, II, III, and XI), fibril-
associated collagen (type IX), and network-forming collagen (type X)
cause a spectrum of diseases of bone, cartilage, and blood vessels.";
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"Nucleotide sequence of a cDNA coding fo
of human prepro alpha 1(III) collagen.";
Nucleic Acids Res. 16:7201-7201(1988).
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MEDLINE-81208139; PubMed-7016180
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MEDLINE-91056145; PubMed-2243125;
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                        COLLAGEN ALPHA COL4A3.
                                                                                                                                                                                                                                                                                                                        "Characterisation of a glycine to valine substitution position 910 of the triple helical region of type III pattent with Ehlers-Danlos syndrome type IV.";
J. Med. Genet. 28:458-463(1991).
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MEDLINE-91374480; PubMed-1895316;
Richards A.J., Lloyd J.C., Ward P.N.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "A single base mutation in the gene for type III collagen converts glycine 847 to glutamic acid in a family with Ehl syndrome type IV. An unaffected family member is mosaic formutation.";
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MEDLINE-92316511; PubMed-1352273;
Richards A.J., Ward P.N., Narcisi P.,
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"A single base mutation that substitutes serine
the alpha 1 (III) chain of type III procollagen
and causes Ehlers Danlos syndrome IV.";
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Richards A., Narcisi P., Lloyd J., Ferguson C., I
"The substitution of glycine 661 by arginine in t
produces mutant molecules with different thermal
causes Ehlers-Danlos syndrome type IV.";
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J. Biol. Chem. 264:19313-19317(1989).
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Eukaryota;
          Bos taurus
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MEDLINE-93022543; PubMed-1357232;
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Tromp G., Kulvaniemi H., Stolle C., Pope F.M., Prockop D.
"Single base mutation in the type III procollagen gene the
the codon for glycine 883 to aspartate in a mild variant
Ehlers-Danlos syndrome IV.";
                                                                                                                                                                                                                                                                                                                                                                            Pope F.M.;
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rrbHA 3(IV) CHAIN (FRAGMENT).
Metazoa;
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WITH 2 OTHER CHAINS TO GENERATE TYPE IV COLLAGEN NETWORK.

-I- SUBCELLULAR LOCATION: CELL SUFFACE (POTENTIAL).

-I- DOMAIN: ALPHA CHAINS OF TYPE IV COLLAGEN HAVE A NONCOLLAGENOUS
DOMAIN (NC1) AT THEIR C-TERMINUS, FREQUENT INTERRUPTIONS OF THE
G-X-Y REPEATS IN THE LONG CENTRAL TRIPLE-HELICAL DOMAIN (WHICH MAY
CAUSE FLEXIBILITY IN THE TRIPLE HELIX), AND A SHORT N-TERMINAL
TRIPLE-HELICAL 7S DOMAIN.

-I- PTM: TYPE IV COLLAGENS CONTAIN NOME OF THE TRIPETINE REPEATING
UNIT (G-X-Y) ARE HYDROXYLATED IN SOME OF THE CHAINS.

-I- PTM: TYPE IV COLLAGENS CONTAIN NUMEROUS CYSTEINE RESIDUES WHICH
ARE INVOLVED IN INTER- AND INTRAMOLECULAR DISULFIDE BONDING. 12 OF
THESE, LOCATED IN THE NC1 DOMAIN, ARE CONSERVED IN ALL KNOWN TYPE
         DOMAIN
DOMAIN
                                                                             Pfam; PF01413; C4; 2.
Pfam; PF01391; Collagen; 4.
Extracellular matrix; Connective tissue; Repeat; Hydroxylation; Glycoprotein; Basement membrane; Collagen; Cell adhesion.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 membrane collagen.".

J. BLO1. Chem. 262:7874-7877(1987).

-i- FUNCTION: TYPE IV COLLAGEN IS THE MAJOR STRUCTURAL COMPONENT GLOMERULAR BASEMENT MEMBRANES (GBM), FORMING A 'CHICKEN-WIRE MESHWORK TOGETHER WITH LAMININS, PROTEOGLYCANS AND ENTACTIN/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE=91093146; PubMed=1985905;
MOTITISON K.E., Germino G.G., Reeders S.T.;

"Use of the polymerase chain reaction to clone and sequence a encoding the bovine alpha 3 chain of type IV collagen.";

J. Biol. Chem. 266:34-39(1991).
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NCBI_TaxID=9913;
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MEDLINE=90202779; PubMed=2318822;
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Jentification of the Goodpasture antiger
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Localization of the Goodpasture epitope to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SUBUNIT: THERE ARE SIX TYPE IV COLLAGEN ISOFORMS, ALPHA 1(IV) ALPHA 6(IV), EACH OF WHICH CAN FORM A TRIPLE HELIX STRUCTURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SIMILARITY: TO OTHER TYPE IV COLLAGENS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SWISS-PROT entry is copyright. It is produced through a collaboration een the Swiss Institute of Bioinformatics and the EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COLLAGENS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Chem.
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                                                                                                                                                                                                                            IPR001442; -.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     263:13374-13380(1988).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        265:5466-5469(1990).
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                                   TRIPLE-HELICAL
NONHELICAL REGION (NC1)
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a 3(IV) chain
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P17139;
O1-AUG-1990 (Rel. 1
O1-MAR-1992 (Rel. 1
O1-NOV-1997 (Rel. 1
                                                                                                                                                                                                                                                                                                                                                                                                    Wilson R., Ainscough R., Anderson K., Baynes C., Berks M.,
Bonfield J., Burton J., Connell M., Copsey T., Cooper J., Coulso
Craxton M., Dear S., Du Z., Durbin R., Favello A., Fraser A.,
Fulton L., Gardner A., Green P., Hawkins T., Hillier L., Jier M.
Johnston L., Jones M., Kershaw J., Kirsten J., Laisster N.,
Johnston L., Lightning J., Lloyd C., Mortimore B., O'Callaghan
Latreille P., Lightning J., Lloyd C., Mortimore B., O'Callaghan
Parsons J., Percy C., Rifken L., Ropora A., Saunders D., Shownke
Sims M., Smaldon N., Smith A., Smith M., Sonnhammer E., Staden R
Sulston J., Thierry-Mieg J., Thomas K., Vaudin M., Vaughan K.,
Waterson R., Watson A., Weinstock L., Wilkinson-Sproat J.,
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01-MAR-1992 (Rel. 21, Last sequence up
01-NOV-1997 (Rel. 35, Last annotation
COLLAGEN ALPHA 1(IV) CHAIN PRECURSOR.
EMB-9 OR CLB-2 OR K04H4.1.
                          genes are located on separate chromosomes.";

J. Biol. Chem. 264:17574-17582(1989)
-:- FUNCTION: COLLAGEN TYPE IV IS SPECIFIC FOR BASEMENT MEMBRANES.
-:- SUBUNIT: TRIMERS OF TWO ALPHA 1(IV) AND ONE ALPHA 2(IV) CHAIN.

TYPE IV COLLAGEN FORMS A MESH-LIKE NETWORK LINKED THROUGH
                                                                                                                                                                             Guo X., Kramer J.M.;
                                                                                                                                                                                                          MEDLINE=90008929; PubMed=2793871;
                                                                                                                                                                                                                                    STRAIN-BRISTOL N2;
                                                                                                                                                                                                                                                         SEQUENCE OF 1446-1758 FROM N.A.
                                                                                                                                                                                                                                                                                                                                          "2.2 Mb of elegans.";
                                                                                                                                                                                                                                                                                                                                                                                       Wohldman P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRAIN=BRISTOL N2;
MEDLINE=94150718; PubMed=7906398;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    collagen of C. elegans.";
Nature 349:707-709(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Guo X., Johnson J.J., Kramer J.M.;
"Embryonic lethality caused by mutations in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRAIN-BRISTOL N2;
MEDLINE-91141582;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Nematoda; Chromadorea
Rhabditidae; Peloderinae; Caenorhabditis
NCBI_TaxID=6239;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Caenorhabditis elegans.
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                                                                                                                                                                                                                                                                                                                                                          contiguous nucleotide sequence from chromosome
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HYDROXYLATION.
OR 349 (BY SIMILARITY).
OR 352 (BY SIMILARITY).
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OR 463 (BY SIMILARITY).
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C03B66F14E7008DE CRC64;
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InterPro; IPR000487; -.
InterPro; IPR001442; -.
InterPro; IPR001442; -.
Pfam; PF01413; C4; 2.
Pfam; PF01391; Collagen; 22.
Extracellular matrix; Connective tissue; Basement membrane;
Extracellular matrix; Glycoprotein; Collagen; Signal.
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PIR; S13651; S13651.
WormPep; K04H4.1; CE00246.
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  224
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PTM: PROLINES AT THE THIRD POSITION OF THE TRIPEPIDE REPEATING UNIT (G-X-Y) ARE HYDROXYLATED IN SOME OF ALL OF THE THECH WHICH ARE INVOLVED IN INTER- AND INTRAMOLECULAR DISULFIDE BONDING. 12 OF THESE, LOCATED IN THE NC1 DOMAIN, ARE CONSERVED IN ALL KNOWN TYPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DISEASE: MUTATIONS IN THIS GENE CAUS LETHALITY DURING LATE EMBRYOGENESIS.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SWISS-PROT entry is copyright. It is produced through
een the Swiss Institute of Bioinformatics and the Ex
Buropean Bioinformatics Institute. There are no resur
by non-profit institutions as long as its content
GVKGEKGLPGPPGPP 238
                                       GVKGDKGNPGWPGAP 15
                                                                                                     Similarity
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195
1530
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1582
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304
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1758
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                                                                                                     64.18;
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OR 1751 (BY SIMILARITY).

OR 1754 (BY SIMILARITY).

BY SIMILARITY.

G -> E (IN MUTANT G34).

G -> E (IN MUTANT G23/HC70).

P -> Q (IN REF. 3).

GFPGMPGLAGPPGQSGQNGNPGRPGLSGPPGEGGVNSQGR
                                                                                                                                                                           G -> R (IN REF. 2)
P -> R (IN REF. 2)
PG -> TR (IN REF. 2)
D -> V (IN REF. 2)
P -> T (IN REF. 2)
P -> L (IN REF. 2)
7 MW; 7083D9AF63E05I
                                                                                                                                                                                                                                                                   IDN -> AGOR (IN REF. 2).

MISSING (IN REF. 2).

G -> R (IN REF. 2).

P -> R (IN REF. 2).

P -> TR (IN REF. 2).
                                                                                 ۲.
                                                                                                   Score 59;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                               KGVKGESGRSGVPGLP -> VSDLSKSDICNIIHLSDVVS
VLRVSLECPDLLDLQGNLDKTETLDDQDSPDHQEKEVSIH
KDAKELKENLEDOEFGVPG (IN REF. 2).
PVGPA -> LSDQLV (IN REF. 2).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NONHELICAL
OR 1637 (BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENE CAUSE TEMPERATURE-SENSITIVE
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1637 (BY SIMILARITY).
1640 (BY SIMILARITY).
                                                                                   Mismatches
                                                                                                                                                                                                          > V (IN REF. 2)
> T (IN REF. 2)
> L (IN REF. 2)
                                                                                                                                                                                        7083D9AF63E05D45 CRC64;
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                                                                                                     DB 1
0.44;
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                                                                                                                         Length 1758;
                                                                                 Indels
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RESULT 20
YYRF2_C
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DT 01-NOV
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     RESULT 21
CA1H_HUA
ID CA1H_H
AC P39060
DT 01-FEB
DT 01-OCT
DT 01-OCT
DT COLLAAG
GN COLL8A
OS HOMO S
OC EUKARY
OC Mammal
OX NCBI_T
RN (1)
RP SEQUEN
RA Sabrel
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Q09578;
Q1-NOV-1997
Q1-NOV-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
DOMAIN
SEQUENCE
                                                                                                                                                                                                                                      CA1H_HUMAN STANDARD: PRT: 1516 AA.
P39060; Q9Y6Q8; Q9Y6Q7; Q9UK38;
01-FEB-1995 (Rel. 31, Created)
01-CCT-2000 (Rel. 40, Last sequence update)
01-OCT-2000 (Rel. 40, Last annotation update)
CCLLAGEN ALPHA 1(XVIII) CHAIN PRECURSOR (CONTAINS: ENDOSTATIN).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SUBMITTED (JUL-1995) to the EMBL/GenBank/DDBJ databases.

-i- FUNCTION: NEMATODE CUTICLES ARE COMPOSED LARGELY OF COLLAGEN-LIKE PROTEINS: THE CUTICLE FUNCTIONS BOTH AS AN EXOSKELETON AND AS A BARRIER TO PROTECT THE WORM FROM ITS ENVIRONMENT (BY SIMILARITY).

-i- SUBUNIT: COLLAGEN POLYPEPTIDE CHAINS ARE COMPLEXED WITHIN THE CUTICLE BY DISULFIDE BONDS AND OTHER TYPES OF COVALENT CROSS-
MEDLINE-98164096; PubMed-9503365; MEDLINE-98164096; PubMed-9503365; MEDLINE-98164096; Rehn M.,
                                                                                                                                      Homo sapiens (Human).
Eukaryota; Metazoa; C
Mammalia; Eutheria; F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pfam; PF01391; Collagen; 2.
Pvnothetical protein; Cuticle; Connective tissue;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa; Nematoda; Chromadorea Rhabditidae; Peloderinae; Caenorhabditis NCBI_TaxID=6239;
                                                                                                                                                                                                                      COL18A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; U21318; AAC46668.1; -. WormPep; K03H9.2; CE01996.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
STRAIN-BRISTOL N2;
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                                                                                                           NCBI_TaxID=9606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Collagen;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WormPep; K03H9.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 GVKGDKGNPGWPGAP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LINKS (BY SIMILARITY).
SIMILARITY: TO OTHER COLLAGENS. STRONG,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COLLAGENS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GIDGPPGIPGWPGEP 156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              similarity
9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Multigene family.
87 116
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(Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
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35, Last sequence up
35, Last annotation
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261
30107 MW;
                                                                                                                                        Chordata;
Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Nematoda; Chromadorea; Rhabditida; Rhabditoidea;
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Pred.
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; F4619D41935A83FD CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TRIPLE-HELICAL REGION.
                                                                                                                                        Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
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          Purmonen
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0.11;
          s.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 285
          Pihlajaniemi T.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 for commercial
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
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And tumor growth, plays a critical role in the maintenance of retinal restructure and in neural tube closure.";

RI Hum. Mol. Genet. 9:2051-2058(2000).

RI Hum. Mol. Genet. 9:2051-2058(2000).

RI Hum. Mol. Genet. 9:2051-2058(2000).

RETINAL STRUCTURE AS WELL AS IN THE CLOSURE OF THE NEURAL TUBE.

CC -!- FUNCTION: ENDOSTATIN POTENTLY INHIBITS ENDOTHELIAL CELL
PROLIFERATION AND ANGIOGRMESIS. MAY INHIBIT ANGIOGRMESIS BY
BINDING TO THE HEPARAN SULPHATE PROTEOGLYCANS INVOLVED IN GROWTH

CC PROLIFERATION AND ANGIOGRMESIS. AND A LONG
PACTOR SIGNALLING (BY SIMILARITY).

CC -!- ALTERNATIVE PRODUCTS: 2 ISOFORMS: A SHORT FORM, NC1-303 AND A LONG
FORM, NC-493 (SHOWN HERE); ARE PRODUCED BY ALTERNATIVE SPLICING.

CC -!- TISSUE SPECIFICITY: PRESENT IN MULTIPLE ORGANS WITH HIGHEST LEVELS

CC -!- TISSUE SPECIFICITY: PRESENT IN MULTIPLE ORGANS WITH HIGHEST LEVELS

CC -!- TISSUE SPECIFICITY: PRESENT IN MULTIPLE ORGANS WITH HIGHEST LEVELS

CC -!- TISSUE SPECIFICITY: PRESENT IN COLIBAL ARE A CAUSE OF KNOBLOCH SYNDROME (KS);

CC -!- DISEASE: DEFECTS IN COLIBAL ARE A CAUSE OF KNOBLOCH SYNDROME (KS);

CC -!- DISEASE: DEFECTS IN COLIBAL ARE A CAUSE OF KNOBLOCH SYNDROME (KS);

CC -IN SUTTREORETINAL DEGENERATION WITH RETINAL DETACHMENT,

MACULAR ABNORMALITIES AND DCCIPITAL ENCEPHALOCELE.

CC -IS SIMILARITY: BELONGS TO THE MILITIPLEXIN FRMILY OF COLLAGENS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RX MEDIINE-20289799; PubMed-10830953;
RA Hattori M., Fujiyama A., Taylor T.D., Watanabe H., Yada T.,
RA Hattori M., Fujiyama A., Taylor T.D., Watanabe H., Yada T.,
RA Park H.-S., Toyoda A., Ishii K., Totoki Y., Choi D.-K., Soeda E.,
RA Chki M., Takagi T., Sakaki Y., Taudien S., Blechschmidt K., Polley A.,
RA Menzel U., Delabar J., Kumpf K., Lehmann R., Patterson D.,
RA Menzel U., Delabar J., Kumpf K., Lehmann R., Patterson D.,
RA Menzel U., Delabar J., Kumpf K., Kawasaki K., Asakawa S.,
RA Reichwald K., Rump A., Schillabbel M., Schudy A., Zimmermann W.,
RA Reichwald K., Rump A., Schillabbel M., Schudy A., Kasakawa S.,
RA Rosenthal A., Kudoh J., Shibuya K., Kawasaki K., Asakawa S.,
RA Rosenthal A., Sasaki T., Nagamine K., Mitsuyama S., Antonarakis S.E.,
RA Minoshima S., Shimizu N., Nordsiek G., Hornischer K., Brandt P.,
RA Minoshima S., Schoen O., Desario A., Reichelt J., Kauer G., Bloecker H.,
RA Ramser J., Beck A., Klages S., Hennig S., Riesselmann L., Dagand E.,
RA Ramser J., Beck A., Klages S., Hennig S., Riesselmann L., Dagand E.,
RA Wehrmeyer S., Borzym K., Gardiner K., Nizetic D., Francis F.,
RA Wehrmeyer S., Borzym K., Gardiner K., Nizetic D., Francis F.,
RA Lehrach H., Reinhardt R., Yaspo M.-L.;
"The DNA sequence of human chromosome 21.";
RN Nature 405:311-319(2000).
                                                                                                                                                                                  This SWI
between
the Eurc
use by non-profit institutions as long as its content is modified and this statement is not removed. Usage by and foentities requires a license agreement (See http://www.isb-sib.or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Passos-Bueno M.R.; "Collagen XVIII, containing an endogenous
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sertie A.L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE-20400145;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TISSUE=Placenta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE OF 1334-1516 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "Cloning of cDNA and genomic DNA encoding human type XVIII collagen and localization of the alpha 1(XVIII) collagen gene to mouse chromosome 10 and human chromosome 21."; Genomics 19:494-499(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Olsen B.R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE OF 834-1516 FROM N.A. MEDLINE-94245237; PubMed-8188291; Oh S.P., Warman M.L., Seldin M.F.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A. MEDLINE=20289799;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "Complete primary structure of two variant forms of human type XVIII collagen and tissue-specific differences in the expression of the corresponding transcripts", Matrix Biol. 16:319-328(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               INVOLVEMENT IN KNOBLOCH SYNDROME
                                                                                                                                                                              SWISS-PROT entry is copyright. It is produced through a collaboration ween the Swiss Institute of Bioinformatics and the EMBL outstation - European Bioinformatics Institute. There are no restrictions on its
                                                                                                                                                                                                                                                                                                                                                       SIMILARITY: BELONGS TO THE MULTIPLEXIN FAMILY OF COLLAGENS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (SEP-1999) to the EMBL/GenBank/DDBJ databases
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PubMed=10942434;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Wei-Jie Z., Xiang-Fu W.; on of human endostatin gene in Escherichia
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EMBL; AL163302; CAB90482.1;
EMBL; L22548; AAA51864.1; -
EMBL; AF184060; AAF01310.1;
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NONHELICAL REGION 10 (COL10).

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MISSING (IN SHORT ISOFORM).
HTTEAGTLPAPTPSPESLGREWAPLTGPSVPPPSS
PRCPWPWPRRRRLLDVLAPLVLLLGVRAASAEP (I
SHORT ISOFORM).
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01-AUG-1990 (Rel. 15, Created)
01-OCT-1994 (Rel. 30, Last sequence update)
30-MAY-2000 (Rel. 39, Last annotation update)
COLLAGEN ALPHA 2(IV) CHAIN PRECURSOR.
                                                                                                    the European Bioinformatics Institute. There are no restrictions use by non-profit institutions as long as its content is in modified and this statement is not removed. Usage by and for con
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sibley M.H., Graham P.L., von Mende N., Kramer J.M.; "Mutations in the alpha 2(IV) basement membrane collagen Caenorhabditis elegans produce phenotypes of differing se EMBO J. 13:3278-3285(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "The two Caenorhabditis elegans basement membrane (type IV) collagen genes are located on séparate chromosomes.";
J. Biol. Chem. 264:17574-17582(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "Genetic identification, sequence, Caenorhabditis elegans alpha 2(IV)
J. Cell Biol. 123:255-264(1993).
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STRAIN-BRISTOL N2;
MEDLINE-94012964; PubMed-7691828;
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Caenorhabditis elegans.
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                                                                                     entities requires a license agreement (See http://www.isb-sib
                                                                                                                                                       This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation -
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MEDLINE-90008929; PubMed-2793871;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida; Rhabditoidea; Rhabditidae; Peloderinae; Caenorhabditis.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FUNCTION: COLLAGEN TYPE IV IS SPECIFIC FOR BASEMENT MEMBRANES. SUBUNIT: TRIMERS OF TWO ALPHA 1(IV) AND ONE ALPHA 2(IV) CHAIN. TYPE IV COLLAGEN FORMS A MESH-LIKE NETWORK LINKED THROUGH INTERMOLECULAR INTERACTIONS BETWEEN 7S DOMAINS AND BETWEEN NC1
                                                                                                                                                                                                                                                                                                                                 TISSUE SPECIFICITY: FORM I IS PREDOMINANT IN EMBRYOS AND FORM II IS PREDOMINANT IN THE LARVAE AND ADULTS.

DOMAIN: ALPHA CHAINS OF TYPE IV COLLAGEN HAVE A NONCOLLAGENOUS DOMAIN (NC1) AT THEIR C-TERMINUS, FREQUENT INTERRUPTIONS OF THE G-X-Y REPEARS IN THE LONG CENTRAL TRIPLE-HELICAL DOMAIN (WHICH ME CAUSE FLEXIBILITY IN THE TRIPLE HELIX), AND A SHORT N-TERMINAL TRIPLE-HELICAL 7S DOMAIN.
                                                                                                                                                                                                            DISEASE: MUTATIONS IN LET-2 ARE GENERALLY EMBRYONIC LETHAL.
                                                                                                                                                                                                                                                             PTM: PROLINES AT THE THIRD POSITION OF THE TRIPEPTIDE REPEATING UNIT (G-X-Y) ARE HYDROXYLATED IN SOME OR ALL OF THE CHAINS. PTM: TYPE IV COLLAGENS CONTAIN UNMERCUS CYSTEIRE RESIDUES WHICH ARE INVOLVED IN INTER- AND INTRAMOLECULAR DISULFIDE BONDING. 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRODUCED BY ALTERNATIVE SPLICING.
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                                                                                                                                                                                                                                COLLAGENS
                                                                     an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                 LOCATED IN
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equence, and alternative splicing
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"Sequence comparison of the Caenorhabditis elegans dp
genes, and their deduced collagen products.";
Gene 120:261-266(1992).
-I-FUNCTION: NEWATODE CUTICLES ARE COMPOSED LARGELY
PROTEINS. THE CUTICLE FUNCTIONS BOTH AS AN EXOSKE
                                                                SEQUENCE FROM N.A.
STRAIN-BRISTOL N2;
MEDLINE-93013043; PubMed-1398138;
                                                                                                        Eukaryota; Metazoa; Nemato
Rhabditidae; Peloderinae;
NCBI_TaxID=6239;
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1591
                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Collagen;
                                                                                                                                                                                                                                                                                                                                                                  Ą.
                                                                                                                                                              34.
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1758
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1707
                                                                                                                                                                     28, Created)
28, Last sequence up
29, Last annotation
                                                                                                                                                                                                                                                                                                                                                                            1682
                                                                                                                              Nematoda; Chromadorea; Rhabditida; Rhabditoldea;
                                                                                                                                                                                                                                                                                                                        63.0%;
                                                                                                                                                                                                                                                                                         15
                                                                                                                                                                                                                                                                                                                                                                  167750
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Glycoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          23.
e tissue; Basement membrane;
                                                                                                                    Caenorhabditis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ALT_SEQ
                                                                                                                                                                                                                                                                                                                                                                         G-> E (IN MN114; 73% LETHAL).
A-> T (IN MN126; 100% LETHAL).
G-> E (IN MN109; 37% LETHAL).
G-> R (IN MN109; 37% LETHAL).
G-> R (IN MN103 AND MN151; 96% L.
G-> R (IN MN152; 50% LETHAL).
G-> E (IN MN129; 100% LETHAL).
G-> E (IN MN143; 100% LETHAL).
G-> R (IN G30; 90% LETHAL).
G-> R (IN G30; 90% LETHAL).
G-> E (IN MN139; 20% LETHAL).
G-> D (IN G25; 2% LETHAL).
G-> D (IN G25; 2% LETHAL).
G-> D (IN G37 AND B246; 9% LETHAL).
G-> D (IN G37 AND B246; 9% LETHAL).
G-> D (IN G37 AND B246; 9% LETHAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TRIPLE-HELICAL REGION.

NONHELICAL REGION (NC1).

OR 1632 (BY SIMILARITY).

OR 1635 (BY SIMILARITY).

BY SIMILARITY.

BY SIMILARITY.

OR 1747 (BY SIMILARITY).

OR 1750 (BY SIMILARITY).

BY SIMILARITY.

O-LINKED (GLYCOSAMINOGLYC).
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                                                                                                                                                                                                                                                                                                                       Score 58; DB 1;
Pred. No. 0.62;
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DIGAMGPAGPPGPIASTMSKGTIIGPKGDLGEKGEK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ISOFORM II)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COLLAGEN ALPHA 2(IV)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         POTENTIAL.
                                                                                                                                                                                                                 PRT;
                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DOMAIN
                                                                                                                                                                                                                                                                                                                                                                  97EE3F3DBB2D2AC5 CRC64;
                                                                                                                                                                                  update)
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(GLYCOSAMINOGLYCAN) (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                            G37 AND B246; 9% LETHAL).
  AS AN EXOSKELETON AND
                                                                                                                                                                                                                                                                                                             Ψ
                                                                                                                                                                                                                                                                                                                                 Length 1758
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                                                                                                                                                                                                                                                                                                              Indels
                                           dpy-13 and
             OF COLLAGEN-LIKE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Repeat; Collagen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               96% LETHAL).
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                                            col-34
  AS
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RESULT 24
CA13_MOUSE
ID CA13_M
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Best Local
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SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CA13_MOUSE STANDARD;
PO8121; Q61429;
01-AUG-1988 (Rel. 08, Created)
15-JUL-1999 (Rel. 38, Last seg
01-OCT-2000 (Rel. 40, Last ann
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its
                                                                            Liau G., Mudryj M., de Crombrugghe B.;
"Identification of the promoter and fi
                                                                                                                                                                              Wood L., Theriault N., Vogeli G.; "Complete nucleotide sequence of the N-terminal domains of the murine alpha-1 type-III collagen chain."; Gene 61:225-230(1987).
                                                                                                                                                                                                                                                                     SEQUENCE OF 1-488 FROM N.A. MEDLINE=8816,7858; PubMed=3443309;
                                                                                                                                                                                                                                                                                                                                       "The mouse type-III procollagen-encoding gene: genomic cloning and complete DNA sequence.";
Gene 147:161-168(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
STRAIN-C57BL X DBA; TISSUE-Embryo;
MEDLINE-95011609; PubMed-7926795;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COL3A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             15-JUL-1999 (Rel. 38, Last sequence update) 01-0CT-2000 (Rel. 40, Last annotation updat COLLAGEN ALPHA 1(III) CHAIN PRECURSOR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Cuticle;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DOMAIN
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL; M80650; AAA27985.1; -.
                                                             (III) collagen
                                                                                                                                                                                                                                                                                                                                                                                                      Toman D., de Crombrugghe B.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
                                                                                                                        MEDLINE=85131189;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            184 GPKGPKGPPGAPGAP 198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local Similarity
                                         Biol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 GVKGDKGNPGWPGAP 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LINKS.
SIMILARITY: TO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BARRIER TO PROTECT THE WORM FROM ITS ENVIRONMENT.
SUBUNIT: COLLAGEN POLYPEPTIDE CHAINS ARE COMPLEXED WITHIN THE
CUTICLE BY DISULFIDE BONDS AND OTHER TYPES OF COVALENT CROSS-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COLLAGENS.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Connective tissue;
103 132
151 177
                                                                                                                          OF 1-28 FROM N.A.
85131189; PubMed=3972847;
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151
181
215
298
1442-1464 FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                       gene.";
260:3773-3777(1985)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       198
277
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              62.0%;
73.3%;
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TRIPLE-HELICAL REGION.
TRIPLE-HELICAL REGION.
TRIPLE-HELICAL REGION.
TRIPLE-HELICAL REGION.
TRIPLE-HELICAL REGION.
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Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Craniata; Vertebrata; Euteleostomi;
Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                first exon of the mouse alpha
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1464 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                update)
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0.16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               family; Collagen.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
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A LO COMPANDA CONTRACTOR OF THE CONTRACTOR OF TH

RESULT 25 MSRE_MOUSE

P30204; MSRE_MOUSE

STANDARD

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MOD_RES
MOD_RES
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CARBOHYD
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DOMAIN
DOMAIN
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EMBL; M18933; AAA37338.1; -.
EMBL; K03037; -, NOT_ANNOTATI
EMBL; X57983; CAA41048.1; -.
ETR; A22287; A22287.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PROSITE; PS01208; VWFC; 1.
Extracellular matrix; Connective tissue; Repeat; Hydroxylation; Glycoprotein; Collagen; Signal.
SIGNAL 1 23 BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PIR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pfam; PF01410; COLFI; 1. Pfam; PF01391; Collagen; 17. PROSITE; PS01208; VWFC; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the EN the European Bioinformatics Institute. There are no restricted the statement of the statement 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            collagen mRNAs.";
Biochim. Biophys. Acta 1089:241-243(1991).
-!- FUNCTION: COLLAGEN TYPE III OCCURS IN MOST SOFT CONNECTIVE TISSUES
                                                                                                                                                                                                          SEQUENCE
                                                                                                                                                                                                                                                                          MOD_RES
                                                                                                                                                                                                                                                                                             MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PROPEP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   InterPro; IPR001007; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MGD; MGI:88453; Col3a1.
InterPro; IPR000087; -.
InterPro; IPR000885; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Metsaeranta M., Toman D., de Crombrugghe B., Vuorio E.; "Specific hybridization probes for mouse type I, II, III and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRAIN=C57BL;
MEDLINE=91274355; PubMed=2054384;
857
                                                                                                             Local
                                        1 GVKGDKGNPGWPG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                O-LINKED GLYCAN CONSISTS OF GLC-GAL DISACCHARIDE (BY SIMILARITY). SIMILARITY: CONTAINS 1 VMFC DOMAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ALONG WITH TYPE I COLLAGEN.
SUBUNIT: TRIMERS OF IDENTICAL ALPHA 1(III) CHAINS. THE CHAINS ARE
LINKED TO EACH OTHER BY INTERCHAIN DISULFIDE BONDS. TRIMERS ARE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ALSO CROSS-LINKED VIA HYDROXYLYSINES.
PTM: PROLINES AT THE THIRD POSITION OF THE TRIPEPTIDE REPEATING UNIT (G-X-Y) ARE HYDROXYLATED IN SOME OR ALL OF THE CHAINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MGI:88453;
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S16373;
GVKGERGSPGGPG
                                                                                     l Similarity
9; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                                                             155
170
                                                                                        Conservative
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S16373.
                                                                                                                                                                                                          AA;
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1195
262
262
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859
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                                                                                                               . 28;
                                                                                                                                                                                                                                                                   NONHELICAL REGION (C-TERMINAL).
O-LINKED (GAL...) (BY SIMILARITY)
HYDROXYLATION (BY SIMILARITY).
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                                                                                                             Pred. No.
                                                                                                                                Score 56;
                                                                                                                                                                                                                             INTERCHAIN
INTERCHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                               TRIPLE-HELICAL
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NONHELICAL REGION (N-TERMINAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CARBOXYL-TERMINAL PROPERTIDE
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                                                                                     Mismatches
                                                                                                                                                                                                          2104EC27A886090B CRC64;
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                                                                                                                                                                                                                               SIMILARITY).
SIMILARITY).
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                                                                                     1;
                                                                                                                                  Length 1464;
                                                                                                                                                                                                                                                                                                                                                                                                                  (BY SIMILARITY).
                                                                                        Indels
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MBL outstation -
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                                                                                        Gaps
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EMBL; L04274; AAA33747.1; ALT_INIT.
EMBL; L04275; AAA39748.1; ALT_INIT.
EMBL; D13382; BAA02650.1; -.
EMBL; M59445; AAA37464.1; -.
EMBL; M59445; AAA37465.1; -.
EMBL; M5946; AAA37467.1; -.
EMBL; M5946; AAAC13774.1; -.
PIR; A38260; A38260.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HEDLINE-93359822; PubMed-8394868; MEDLINE-93359822; PubMed-8394868; MEDLINE-93359822; PubMed-8394868;
                                                                                                                                                                                                                                                                                                                                                                                                  This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   J. Lipid Res. 36:1305-1314(1995).

-I- FUNCTION: MEMBRANE GLYCOPROTEINS IMPLICATED IN THE PATHOLOGIC DEPOSITION OF CHOLESTEROL IN ARTERIAL WALLS DURING ATHEROGENESIS.
TWO TYPES OF RECEPTOR SUBUNITS EXIST. THESE RECEPTORS MEDIATE THE ENDOCYTOSIS OF A DIVERSE GROUP OF MACROMOLECULES, INCLUDING MODIFIED LOW DENSITY LIPOPROTEINS (LDL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE OF 349-458 FROM N.A.
MEDLINE-91062370; PubMed-1978939;
MEDLINE-91062370; PubMed-1978939;
Freeman M., Ashkenas J., Rees D.J., Kingsley D.M., Copeland N.G.,
Jenkins N.A., Krieger M.;
"An ancient, highly conserved family of cysteine-rich protein domains
revealed by cloning type I and type II murine macrophage scavenger
receptors.";
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01-OCT-1996 (Rel. 34, Last sequence update)
30-AMY-2000 (Rel. 39, Last annotation update)
MACROPHAGE SCAVENGER RECEPTOR TYPES I AND II (MACROPHAGE ACETYLATED LDL RECEPTOR I AND II).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "Structure of the murine macrophage scavenger receptor gene and evaluation of sequences that regulate expression in the macrophage cell line, p38BD.";
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                                                                                                                                                                                                                                                                                                                                      entities requires a license agreement or send an email to license@isb-sib.cl
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MEDLINE=93131972; PubMed=8380589;
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Mammalia; Eutheria;
InterPro;
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NCBI_TaxID-10090;
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ALTERNATIVE PRODUCTS: THE TWO FORMS OF MACROPHAGE SCAVENGER
RECEPTOR (TYPES I AND II) ARE PRODUCED BY ALTERNATIVE SPLICING
                                      A38260; A38260.
MGI:98257; SCVI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    THE SAME GENE.
                                                                                                                                                                                                                                                                                                                                         an email to license@isb-sib.ch).
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Rodentia;
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PROSITE; PS00420; SRCR_1; 1.
Transmembrane; Glycoprotein; Endocytosis; Coiled coil;
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CYTOPLASMIC (POTENTIAL).
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COLLAGEN-LIKE
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Q1804 homo sapien
Q1807 drosophila
Q9vmv5 drosophila
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Q9z1k4 rattus norv	Q9uc14 homo sapien	Q9nzq6 homo sapien	Q9jli2 mus musculu	Q9qzs0 mus musculu	Q60444 cricetulus	Q9u9k7 caenorhabd1	O93484 oncorhynchu	077087 alvinella p	Q9u9k6 caenorhabdi	P90679 arenicola m	O17866 caenorhabd1	Q9wub9 mesocricetu	Q9np19 homo sapien		Q19099 caenorhabdi		Q9y6q8 homo sapien	Q9y6q7 homo sapien	Q90412 brachydanio	Q9j104 rattus norv	mus		Q9jmh4 mesocricetu	Q9ujc7 homo sapien	Q07265 strongyloce

ALIGNMENTS

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Matches 11; Conservative
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SEQUENCE
            Q14052 PRELIMINARY; PRT; 673 AA. Q14052; O1-NOV-1996 (TrEMBLrel. 01, Created) O1-NOV-1996 (TrEMBLrel. 01, Last sequence update) O1-JUN-2000 (TrEMBLrel. 14, Last annotation update) ALPHA-2 TYPE IV COLLAGEN (FRAGMENT). COL4A2.
                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa;
Mammalia; Eutheria;
NCBI_TaxID=9606;
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Q9NUB7;
01-0CT-2000 (TrEMBLrel. 15, Created)
01-0CT-2000 (TrEMBLrel. 15, Last sequence update)
01-0CT-2000 (TrEMBLrel. 15, Last annotation update)
DA24A33.1 (COLLAGEN, TYPE IV, ALPHA 5 (ALPORT SYNDROME)) (FRAGMENT).
                                                                                                                                                                                                                                                                               Submitted (FEB-2000) to the EMBL/GenBank/DDBJ databases EMBL; AL035425; CAB90289.1; -.
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 Homo sapiens (Human).
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2; Mismatches
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01-NOV-1996
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                                                                                                                                    Q919K3
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MEDILINE=90062114; PubMed=2584206;

Nishimura I., Muragaki Y., Olsen B.R.;

"Tissue-specific forms of type IX collagen-proteoglycan use of two widely separated promoters.";

J. Biol. Chem. 264:20033-20041(1989).

EMBL; M28660; AAA48709.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-NOV-1996 (TrEMBLrel. 01, Created)
01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
CARTILAGE ALPHA-1(IX) COLLAGEN-PROTEOGLYCAN (FRAGMENT).
Callus gallus (Chicken).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
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MEDITA:=88085168; PubMed=3692475;

Killen P.D., Francomano C.A., Yamada Y., Modi W.S., O'brien S.J.;

"Partial structure of the human alpha 2(IV) collagen chain and chromosomal localization of the gene (COL4A2).";

Hum. Genet. 77:318-324(1987).

EMBL; M24766; AAAA52043.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           INTERPRO; IPRO00087; -. PFAM; PF01391; Collagen; 2.
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Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Extracellular matrix.
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174 AA;
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Q14054;
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01-NOV-1996
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                                                                                                                                                                                                                                                                                                                                             Christiano A.M., Rosenbaum L.M., Chung-Honet L.C., Parente M.G., Woodley D.T., Pan T.C., Zhang R.Z., Chu M.L., Burgeson R.E., Uitto J.; "The large non-collagenous domain (NC-1) of type VII collagen is amino-terminal and chimeric. Homology to cartilage matrix protein, the type III domains of fibronectin and the A domains of von Willebrand
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MEDLINE=94012661;
Hoffman G.G., Lee
                                                TISSUE-PLACENTA;
                                                                                                          "The carboxyl-terminal half of type VII collagen, including collagenous NC-2 domain and intron/exon organization of the corresponding region of the COL7A1 gene.";
Hum. Mol. Genet. 2:273-278(1993).
                                                                                                                                                                                               MEDLINE=93271985; PubMed=8499916; Greenspan D.S.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene.
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Parente M.G., Chung L.C., Ryynanen J., Woodley D.T.,
Bauer E.A., Mattel M.G., Chu M.L., Uitto J.;
"Human type VII collagen: cDNA cloning and chromosoma
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Mammalia; Eutheria;
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Gallus gallus (Chicken).
                                                                  SEQUENCE FROM N.A.
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Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
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9; Conserv
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PubMed=8407948;
S., Christiano
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      A.M.,
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                                                                                                                                                      SEQUENCE FROM N.A.

MEDLINE-89149773; PubMed-2537631;
Saitta B., Buttice G., Gambino R.;
"Isolation of a putative collagen-like ge
Paracentrotus lividus.";
Biochem. Biophys. Res. Commun. 158:633-63
EMBL; M24558; AAA294391; -.

INTERPRO; IPRO00087; -.

PFAM; PF01391; Collagen; 4.
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HSSP; P12111; IKNT.
INTERPRO; IPRO00087; -.
INTERPRO; IPR001777; -.
INTERPRO; IPR002035; -.
INTERPRO; IPR002223; -.
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PRINTS; PRO0759; BASICPTASE.
PROSTTE; PRO0280; BPTLKUNITZ; 1.
PROSTTE; PS00280; BPTLKUNITZ; 1.
Signal; Structural protein; Serine protease inhibitor.
Signal; Structural protein; Collagen Type VII.
TOLLAGEN TYPE VII.
TOLLAGEN TYPE VII.
TOLLAGEN TYPE VII.
TOLLAGEN TYPE VII.
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SEQUENCE
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Paracentrotus lividus (Common sea urchin).

Eukaryota; Metazoa; Echinodermata; Eleutherozoa; Echinozoa
Echinoidea; Euechinoidea; Echinacea; Echinoida; Echinidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-NOV-1996 (TrEMBLrel. 01, 01-NOV-1996 (TrEMBLrel. 01, 01-JUN-2000 (TrEMBLrel. 14,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 "Structural organization of the human type VII collagen gene (Composed of more exons than any previously characterized gene." Genomics 21:169-179(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Christiano A.M., Hoffman G.G., Chung-Honet L.C., Uitto J., Greenspan D.S.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      location of the gene for the cytochrome c reductase.";
                                                                                                                                                                                                                                                                                                                                                                                                                             Paracentrotus
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                                                                                                                                                                                                                                                                                                                                                                                                  NCBI_TaxID-7656;
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4; PF000041; fn3; 9.
4; PF00092; vwa; 2.
4; PF01391; Collagen; 21.
4; PF01391; CyuFADOMAIN.
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12; Conserv
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Pred. No. 0.
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Matches 11
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01-NOV-1996 (Trem
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ALPHA-1 COLLAGEN.
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MEDLINE-92348411;
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NCBI_TaxID=7668;
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"The structural organization of an alpha 2 (type collagen gene from the filarial nematode Brugia Mol. Blochem. Parasitol. 70:227-229(1995).

EMBL: U07224; AAC46611.1; -.
INTERPRO; IPR000087; -.
INTERPRO; IPR001442; -.
PFAM; PF01391; Collagen; 23.
PFAM; PF01391; C4; 2.
                                                                                                                                                                             STRAIN-APERIODIC;
MEDLINE-95364846; PubMed-7637709;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2(I) collagen.";
J. Biol. Chem. 267:15559-15562(1992).
EMBL; M92040; AAA30035.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PFAM; PF01391; Collagen; PFAM; PF01410; COLFI; 1. PRODOM; PD002078; -; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Strongylocentrotus purpuratus (Purple sea urchin)
Eukaryota; Metazoa; Echinodermata; Eleutherozoa;
                                                                                                                                                                  Caulagi V.R., Rajan T.V.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Exposito J.Y., D'Alessio M., Solursh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Echinoidea; Euechinoidea;
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                                                                                                                                                                                                                                                                                        Metazoa; Nematoda; Chromadorea; Spirurida; Filarioidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (TrEMBLrel.) (TrEMBLrel.)
                                                                                                                                                                                                                                                                                                                        (TremBLrel. 01, Created)
(TremBLrel. 01, Last sequence up
(TremBLrel. 14, Last annotation
ement membrane Collagen (IV).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                PRELIMINARY;
                                                                                                                                                                                                                                                                        Brugia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PubMed-1639795;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      67.4%;
78.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            evolutionarily
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        133024 MW;
 172402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01,
01,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Echinacea;
M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Created)
Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 62; DB 5; Pred. No. 0.43; 1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .94D9CDA71A9FD73D CRC64;
 595F16554CBE2D24 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                1802
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            homologous
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                                                                                                                                                                                                                                                                                                                                                                                                                Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ramirez F.;
                                                                                                                                                                                                                                                                                                                                                            update)
                                                                                                                                                (type
                                                                                                                                                                                                                                                                                                                                            update)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 1414;
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                                                                                                                                       IV) basement membrane
nalay1.";
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RESULT
Q9VVY2
         ACD CONTROL CO
                                                                                                                                  Adams N.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,
RA Mannatides P.G., Scherer S.E., Li P.W., Hoskins R.A., Galle R.F.,
RA George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N.,
RS Sutton G.G., Wortman J.R., Yandell M.D., Zhang O., Chen L.X.,
RS Sutton G.G., Wortman J.R., Yandell M.D., Zhang O., Chen L.X.,
RA Brandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D.,
RA Ballew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M.,
RA Ballew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M.,
RA Berkova D., Botchan M.R., Bouck J., Brokstein P., Brottier P.,
RA Berkova D., Botchan M.R., Bouck J., Brokstein P., Brottier P.,
RA Borkova D., Botchan M.R., Bouck J., Brokstein P., Brottier P.,
RA Borkova D., Berman B.P., Bhandari D., Bolshakov S.,
RA Borkova D., Belcher A., Deng Z., Mays A.D., Dew I., Dietz S.M.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport I., Dietz S.M.,
RA Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P.,
RA Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Pleischmann W.,
Rosler C., Gabriellan A.E., Garg N.S., Gelbart W.M., Glasser K.,
RA Harris N.L., Harvey D., Heiman T.J., Hernandez J.R., Houck J.,
RA Harris N.L., Harvey D., Heiman T.J., Hernandez J.R., Houck J.,
RA Harris N.L., Harvey D., Kraft C., Kravitz S., Kulp D., Lai Z.,
RA Glodek A., Gong F., Gorrell J.H., Gu Z., Guan P., Harris M.,
RA Liu X., Mattei B., McIntosh T.C., Knelcod M.P., McPherson D.,
RA Kimmel B.E., Kodira C.D., Kraft C., Kravitz S., Kulp D., Lai Z.,
RA Mcimel B.E., Kodira C.D., Kraft C., Kravitz S., Kulp D., Lai Z.,
RA Merkilov G., Milshina N.V., Mobarry C., Morris J., Moshrefi A.,
Neus B.C., Siden-Klamos I., Simpson M., Skupski M.P., Smith T.,
RA Palazzolo M., Pitman G.S., Pan S., Pollard J., Puri V., Reese M.G.,
RA Reinert K., Remington K., Sandders R.D.C., Scheeler F., Shen H.,
Shen H., Shong F. N., Zhong K., Weissenbach J.,
RA Palas R., Perctor C., Turner R., Venter E., Wang A.H., Wang X.,
Rang C., Perchollar R.C., Stapleton M., Strong G., Zhao Q.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
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Best Local Similarity
Matches 10; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-MAY-2000
01-MAY-2000
01-JUN-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ephydroidea; Dro
NCBI_TaxID=7227;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CG14089
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE=20196006; PubMed=10731132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STRAIN-BERKELEY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pterygota; Neoptera;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Drosophila
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ц
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GIRGDKGSPGIPGA 1209
                                                               PF01391; Collagen; 1.
                                    PR01
                                                                                        IPR002965;
                                                                                                                IPR000087; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   melanogaster (Fruit 1
Metazoa; Arthropoda;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (TrEMBLrel.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Drosophilidae; Drosophila.
                              PRICHEXTENSN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            14
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71.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ter (Fruit fly).
Arthropoda; Tracheata; Hexapoda; Insecta;
Endopterygota; Diptera; Brachycera; Musc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       13, Created)
13, Last sequence 14, Last annotations
   ₩.
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Pred.
F84B9C912D8EC1CD CRC64;
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annotation update)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Muscomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
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Q16593
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Best Local S
Matches 10
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Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q90612
Q90612;
01-NOV-1996
01-NOV-1996
01-JUN-2000
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Q16593;
Q1-NOV-1996
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NON_TER
SEQUENCE
      EMBL;
                              Nah H.D., Niu Z., Adams S.L.;
"An alternative transcript of the chick type does not encode type III collagen.";
J. Biol. Chem. 269:16443-16448(1994).
                                        J. Biol.
                                                                                                                                                                                                                                                                                                                                                                                        Gallus gallus (Chicken).
                                                                                                                                                                                                                                                                                                                                                                                                                             COL3A1.
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01-NOV-1996 (TIEMBLIEL 101, Last sequence update)
01-CCT-2000 (TIEMBLIEL 15, Last annotation update)
CCLLAGEN-LIKE PROTEIN (447 AA) (FRAGMENT).
                                                                                                                                                            MEDLINE=94266842; PubMed=8206952;
                                                                                                                                                                                                                                                                                                                            Archosauria; Aves;
                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                        HYPOTHETICAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; X14963; CAA33085.1; -. EMBL; X15038; CAA33142.1; -.
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Mammalia; Eutheria;
                                                                                                                                                                                                 SEQUENCE FROM
                                                                                                                                                                                                                                                             NCBI_TaxID=9031;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Submitted (MAY-1992)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Kimura S.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TISSUE-PLACENTA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Submitted (FEB-1990)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Kimura S.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TISSUE=PLACENTA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens (Human)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID=9606;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    [NTERPRO;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 GVKGDKGNPGWPGAP 15
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      U07974;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      447
                                                                                                                                                                                                                                                                                                                                                                                                                                                 (TrEMBLrel. 01, Created)
(TrEMBLrel. 01, Last sequence update)
(TrEMBLrel. 14, Last annotation updat
L PROTEIN (FRAGMENT).
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41829 MW;
                                                                                                                                                                                                                                                                                                                         Neognathae;
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Primates;
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73.3%;
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Pred. No.
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Pred.
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                                                                                                                                                                                                                                                                                                                            Galliformes;
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                                                                                                    III collagen
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Matches 10; Conserv
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                                                                                                                                                                                                                                                                                                                    PFAM; PF00093; vwc; 1.
PFAM; PF01391; COLLAgen; 11.
PROSITE; PS01208; VWFC; 1.
NON_TER 886 886
SEQUENCE 886 AA; 81916 MY
                                                                                      01-MAY 2000 (TrEMBLrel. 13, Created)
01-MAY 2000 (TrEMBLrel. 13, Last sequence update)
01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
180 KDA BULLOUS PEMPHIGOID ANTIGEN 2/TYPE XVII COLLAGEN.
                                                                                                                                                                                                                                                                                                                                                                           MEDLINE-94266842; PubMed-8206952;
Nah H.D., Niu Z., Adams S.L.;
Nah H.D., Niu Z., Adams S.L.;
"An alternative transcript of the chick type III collagen gene that does not encode type III collagen.";
J. Biol. Chem. 269:16443-16448(1994).
EMBL; U07973; AAA83407.1; -.
EMBL; U07973; AAA83407.1; -.
INTERPRO; IPRO001007; -.
INTERPRO; IPRO001007; -.
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01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
ALPHA-1 COLLAGEN TYPE III (FRAGMENT).
SEQUENCE FROM N.A. MEDLINE-97164601; PubMed-9012408;
                                               Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gallus gallus (Chicken).
Eukaryota; Metazoa; Chor
                                                                       Homo sapiens
                                                                                 BPAG2/COL17A1
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                                    NCBI_TaxID-9606;
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                                                                                                                                                                                                               857 GVKGERGSPGGPGA 870
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10; Conserv
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                                                                     (Human)
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27601 MW;
                                              Chordata;
Primates;
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Pred. No. 0.18;
                                                Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
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                                               Hominidae;
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ldae; Phasianinae;
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"Cloning of the I
of novel mutation
                                                                                                                               Q9NQK9
Q9NQK9;
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SEQUENCE
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EMBL;
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Homo sapiens (Human).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
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Am. J. Hum.
                                                                                                                                                                                                                                                                                                                                                                                                                 PFAM; PF01391;
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11; Conserv
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                                                               O (TrEMBLrel. 15, Created)
O (TrEMBLrel. 15, Last sequence update)
O (TrEMBLrel. 15, Last annotation update)
(COLLAGEN, TYPE XVII, ALPHA 1 (BP180)).
                                                                                                                                                                                                                                                                                                                                                                                    1497
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                                                                                                                                                  PRELIMINARY;
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AAB51499.
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78.6%;
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 Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
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Matches 11
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Best Local
                           Eukaryota; Metazoa; Arthropoda; Trac
Pterygota; Neoptera; Endopterygota;
Ephydroidea; Drosophilidae; Drosophi
NCBI_TaxID-7227;
                                                                                           01-JAN-1998
01-JUN-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Brown A.;
Submitted (JUL-2000) to the EMBL/GenBank/DDBJ
EMBL; AL138761; CAC00589.1; -.
Collagen.
SEQUENCE 1497 AA; 150418 MW; E01027005F3AE
 SEQUENCE FROM N
Yasothornsrikul
                                                      Drosophila melanogaster (Fruit fly)
Eukaryota; Metazoa; Arthropoda; Trac
                                                                                   COLLAGEN TYPE
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                                                                                                                      018407;
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Mammalia; Eutheria;
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EMBL; M91669; AAA35605.1;
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Giudice G.J., Emery D.J., Diaz L.A.;
"Cloning and primary structural analysis
                                                                                                                                                                                                                                                                                                                                                                                                                                 BULLOUS
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                                                                                                                                                                              995
                                                                                                                                                                                                                                                                                                                  autoantigen BP180.";
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                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=9606;
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11; Conservative
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Primates;
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Last annotation update)
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Pred. No. 0.92
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Catarrhini;
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Cramer
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                                            Diptera;
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                                                       Hexapoda;
Kimbrell D.A.
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                                             Brachycera; Muscomorpha;
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RA Ballew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M.,
Beeson K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S.,
RA Borkova D., Botchan M.R., Bouck J., Brokstein P., Brottier P.,
RA Burtis K.C., Busam D.A., Butler H., Cadleu E., Center A., Chandra I.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies R.,
RA de Pablos B., Delcher A., Deng Z., Mays A.D., Dew I., Dietz S.M.,
Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P.,
RA Durbin K.J., Evangelista C.C., Ferriar C., Ferriera S., Fleischmann W.,
RA Fosler C., Gabrielian A.E., Garg N.S., Gelbart W.M., Glasser K.,
RA Glodek A., Gong F., Gorrell J.H., Gu Z., Guan P., Hairis M.,
RA Glodek A., Gong F., Gorrell J.H., Gu Z., Guan P., Hairis M.,
RA Harris N.L., Harvey D., Heiman T.J., Hernandez J.R., Houck J.,
RA Harris N.L., Harvey D., Heiman T.J., Wei M.-H., Ibeywam C.,
RA Alment B.E., Kodira C.D., Kraft C., Kravitz S., Kulp D., Lai Z.,
RA Lasko P., Lei Y., Levitsky A.A., Li J., Li Z., Liang Y., Lin X.,
RA Markulny G. Mailshina N. V. Mocharry C. Morris J. McCherson D.,
Mornty G. Mailshina N. V. Mocharry C. Morris J. McChersia
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Matches 10
   Merkulov G., Milshina N.V., Mobarry C., Morris J., Moshrefi A., Mount S.M., Moy M., Murphy B., Murphy L., Muzny D.M., Nelson D.N., Nelson D.R., Nelson K.A., Nixon K., Nusskern D.R., Pacleb J.M., Paleson D.R., Peltman G.S., Pan S., Pollard J., Puri V., Reese I Reinert K., Remington K., Saunders R.D.C., Scheeler F., Shen H. Shue B.C., Siden-Kiamos I., Simpson M., Skupski M.P., Smith T., Spier E., Spradling A.C., Stapleton M., Strong R., Sun E., Svirskas R., Tector C., Turner R., Venter E., Wang A.H., Wang X. Wang Z. Y., Wassarman D.A., Weinstock G.M., Weissenbach J., Walliams S.M., Woodage T., Worley K.C., Wu D., Yang S., Yao Q.A Ye J., Yeh R.-F., Zaveri J.S., Zhan M., Zhang G., Zhao Q., Zhen
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Q9VMV5;
01-MAY-2000
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Amanatides P.G., Scherer S.E., Li P.W., Hoskins R.A
George R.A., Lewis S.E., Richards S., Ashburner M.,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda;
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                     INTERPRO; IPRO02035; -.

INTERPRO; IPRO02223; -.

PFAM; PF00014; Kunitz_BPTI; 1.

PFAM; PF00041; fn3; 9.

PFAM; PF00092; vwa; 2.

PFAM; PF01391; Collagen; 22.

PFAM; PF00759; BASICPTASE.

PROSITE; PRO0250; BPTI_KUNITZ; 1
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01-NOV-1998 (TrEMBL
01-OCT-2000 (TrEMBL
TYPE VII COLLAGEN.
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EMBL; AE003608; AAF52203.1; -.
FLYBASE; FBgn0016075; vkg.
INTERPRO; IPR000087; -.
INTERPRO; IPR001442; -.
DPAMA: BROADS
                                                                                                                               Kivirikko S., Li K., Christiano A.M., Uitto J.;
Submitted (JUI-1995) to the EMBL/GenBank/DDBJ databases
EMBL; U32107; AABE6593.1; -.
EMBL; S63654; AABE7492.1; -.
HSSP; P12111; ZKNT.
MGD; MGI:88462; CO17a1.
INTERPRO; IPR001777; -.
INTERPRO; IPR001777; -.
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COLTA1.
MUS musculus (Mouse).
Mus mvota; Metazoa; Chordata;
haria; Rodentia;
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MEDLINB-93315168; PubMed-8325648;
MEDLINB-93315168; PubMed-8325648;
Li K., Christiano A.M., Copeland N.G., Gilbert D.J., Chu M.L.,
Jenkins N.A., Uitto J.;
"CDNA cloning and chromosomal mapping of the mouse type VII collagen
gene (Col7al): evidence for rapid evolutionary divergence of the
                                                                                                                                                                                                                                                   Kivirko S., Li K., Christiano A.M., Uitto J.;
"Cloning of mouse type VII collagen reveals evolutionary
of functional protein domains and genomic organization.";
J. Invest. Dermatol. 106:1300-1306(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa;
Mammalia; Eutheria;
NCBI_TaxID=10090;
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gene.";
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SEQUENCE FROM N.A.

MEDLINE-93186842; PubMed-8444899;
Exposito J.Y., D'Alessio M., Di Liber
"Complete primary structure of a sea
chain and analysis of the 5' end of i
J. Biol. Chem. 268:5249-5254(1993).

EMBL; L02917; ANA30039.1; -.

INTERPRO; IPR001442; -.
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Q07265;
Q1-NOV-1996
Q1-NOV-1996
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Q26312;
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Eukaryota; Metazoa; Echinodermata; Eleutherozoa; Echinozoa;
Echinoidea; Euechinoidea; Echinacea; Echinoida; Strongylocentrotidae;
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Eukaryota; Metazoa; Echinodermata; Eleutherozoa; Echinozoa;
Echinoidea; Euechinoidea; Echinacea; Echinoida; Strongylocentrotidae;
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         PFAM; PF01391; Collagen; PFAM; PF01413; C4; 2.
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NCBI_TaxID=7668;
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EMBL; S64572; AAB20270.1; -.
INTERPRO; IPRO00087; -.
PFAM; PF01391; Collagen; 13.
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MEDLINE=92038439; PubMed=1936564;
Wessel G.M., Etkin M., Benson S.;
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NONFIBRILLAR COLLAGEN (FRAGMENT).
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                                                                                                      Yamamoto K., Inoue N., Fujimori A., Saito T., 
"Mesocricetus auratus mRNA for type XVII coll 
Submitted (MAY-1999) to the EMBL/GenBank/DDBJ 
EMBL; AB027759; BAA943B1.1; -. 
SEQUENCE 1431 AA; 144579 MW; 4315631FEB2C9
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Choria; Primates;
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                                                                                                                                                                                                                                                                                                   Mesocricetus auratus (Golden hamster).
Eukaryota; Metazoa; Chordata; Craniatz
Mammalia; Eutheria; Rodentia; Sciurogr
                                                                                                                                                                                                                                                                                                                                                                  COLLAGEN TYPE XVII
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Submitted (JAN-1999) to the EMBL; AL031622; CAA20937.1; INTERPRO; IPR000087; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q9UJC7;
                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                          NCBI_TaxID=10036;
                                                                                                                                                                                                                                                                                  Mesocricetus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PFAM; PF01391; Collagen; 10.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bird C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
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-2000 (TIEMBLIFE1. 13, Last Sequence update)
-2000 (TIEMBLIFE1. 14, Last annotation update)
(COLLAGEN ALPHA 5(IV) CHAIN PRECURSOR) (FRAG
    10;
                       Similarity
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    Conservative
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: 72760 MW;
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                   64.1%;
66.7%;
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54.28;
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73.38;
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Last sequence update)
Last annotation updat
Score 59; DB
Pred. No. 1.2;
2; Mismatches
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Pred. No.
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Pred. No. 1
                                                                                                                                                                                                                                                                                                 Craniata; Ver
Sciurognathi;
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                                                                                                                                                                       Saito T., Shinkai H.,
XVII collagen.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1431 AA
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               DB
1.2;
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0.64;
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                                         Length 1431;
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;; Cricetinae;
                                                                                                                                                                                             Sakiyama
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Q07563
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                                                                                                                                                                                                                          RESULT
                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                              Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LIK., Tamai K., Tan E.M., Uitto J.;

"Cloning of type XVII collagen. Complementary and genomic DNA sequences of mouse 180 kilodalton bullous pemphigoid antigen (BPAG2) predict an interrupted collagenous domain, a transmembrane segment, and unusual features in the 5'-end of the gene and the 3'-untranslated region of the mrNA.";

and LORENZES B834(1993).

1. FUNCTION: THE COLLAGEN DOMAINS OF BP180 ALLOW THE HEMIDESMOSOME TO FORM STABLE INVERACTIONS WIH THE CONSTITUENTS OF THE EXTRACELLULAR MATRIX OF THE CUTANEOUS BASEMENT MEMBRANE ZONE.

1. SUBCELLULAR LOCATION: A COMPONENT OF THE HEMIDESMOSOME.

1. SUBCELLULAR LOCATION: A COMPONENT OF THE HEMIDESMOSOME.

1. SUBCELLULAR LOCATION: A COMPONENT OF THE HEMIDESMOSOME.
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Q07563;
Q1-NOV-1996
Q1-NOV-1996
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Q9QZR9; Ol-MAY-2000 (TrEMBLrel. 13,
01-MAY-2000 (TrEMBLrel. 13,
01-OCT-2000 (TrEMBLrel. 15,
                         SEQUENCE FROM N.A. TISSUE-KIDNEY;
                                                                        Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
MEDLINE=20005934; Pub
Lu W., Phillips C.L.,
                                                              NCBI_TaxID=10090
                                                                                                      Mus musculus (Mouse).
                                                                                                                    COL4A4.
                                                                                                                                ALPHA 4 COLLAGEN IV.
                                                                                                                                                                                                                                                                                                                                                                                                                                  BULLOUS PEMPHIGOID (BP).
EMBL; L08407; AAA37443.1; -.
MGD; MGI:88450; COl17a1.
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Mammalia; Eutheria;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mus musculus (Mouse).
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                                                                                                                                                                                                                                                                                                                                                                                             Antigen;
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                                                                                                                                                                                                                                                            948 GPKGDQGDPGVPGTP
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                                                                                                                                                                                                                                                                                        1 GVKGDKGNPGWPGAP
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HEMIDESMOSOME IS DISRUPTED LEADING TO THE BLISTERING SKIN DISORDER
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                                                                                                                                                                                                                                                                                                                                                                                             Cell adhesion
                                                                                                                                                                                                                                                                                                                                                                                 1433 AA;
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PubMed=10534397;
.L., Killen P.D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Chordata;
Rodentia;
                                                                                                                                                                                                                                                                                                                              64.18;
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01,
14,
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14, Last annotation update)
ALPHA 1 (BULLOUS PEMPHIGOID
                                                                                                                                            Last sequence update)
Last annotation update)
                                                                                                                                                                       Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Created)
                                                                                                                                                                                                                                                                                                                              Score 59;
Pred. No.
                                                                           Craniata; Vertebrata; I
Sciurognathi; Muridae;
                                                                                                                                                                                                PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Craniata; Vertebrata; Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                 B8F808832A19922C CRC64;
Hlaing
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                                                                                         Euteleostomi
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; Murinae; Mus
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                                                                              Mus
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RESULT 25
Q9JI04
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Search completed: May 23, 2001, 16:17:05 Job time: 96 sec
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Best Local Similarity 60.0
Matches 9; Conservative
                                                                                                                                                                                                                                                                                                                Query Match 64.1%;
Best Local Similarity 76.9%;
Matches 10; Conservative
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SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRAIN-SPRAGUE DAWLEY;
Chernousov M.A., Rothblum K.N., Tyler W.A., Stahl R.C., Carey D.J.;
Chernousov M.A., Rothblum K.N., Tyler W.A., Stahl R.C., Carey D.J.;
"Schwann cells synthesize type V collagen that contains a novel alpha 4 chain.";
Submitted (MAY-2000) to the EMBL/GenBank/DDBJ databases.
EMBL; AF272661; AAF76432.1;
Collagen.
Collagen.
1737 AA; 171574 MW; D635D5D57481C257 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-OCT-2000 (TrEMBLrel. 15, Created)
01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
01-OCT-2000 (TrEMBLrel. 15, Last annotation update)
ALPHA 4 TYPE V COLLAGEN.
Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
NCBI_TaxID-10116;
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"Insertional mutation of the collagen genes col4a3 and col4a4 in a mouse model of alport syndrome.";
Genomics 61:113-124(1999).
EMBL; AF169388; AAD50450.1;
EMBL; MGI:104687; Col4a4.
INTERPRO; IPR001047; -.
INTERPRO; IPR001442; -.
PFAM: PF01413; C4; 2.
                                                                                                                                                                      1 GVKGDKGNPGWPG 13
| |||:|||| ||
| 740 GPKGDRGNPGLPG 752
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
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|::||:||:|| || 1
176 GIQGDRGDPGPPGLP 190
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                                                                                                                                                                                                                                                                                                                Score 59; DB:
Pred. No. 1.5;
1; Mismatches
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Pred. No. 1.4;
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                                                                                                                                                                                                                                                                                                                                                                                 DB 11; Length 1737;
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